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Supporting knowledge construction and literate talk in Secondary Social Studies

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Abstract

In this paper we describe Expanding Textual Repertoires (ETR) as a framework for enhancing Singaporean secondary school teachers' understanding of the nature and effective teaching of the increasingly specialized language and literacy competencies required of their students for skilled participation in the curriculum areas at the secondary grade levels. Drawing from a larger intervention project involving the development, and the introduction to teachers, of the three principles of ETR (intellectual quality, connected learnings, explicit instruction), we examine in what ways it could bring greater coherence, keener awareness of the language and literacy demands, as well as a more confident and critical engagement with the subject knowledge to the work and classroom interactions of one of the secondary Social Studies teachers.

Looking at her post-intervention delivery of a unit of work, we show how the Social Studies teacher developed and trialled new teaching materials and tasks in the light of her broadened understandings of effective teaching through the ETR framework, refining and modifying them by ongoing analysis of the classroom learning environment and her students' responses. Through the analysis of ongoing sequences of lessons across a unit of work, we document the 'developmental history' [Christie, F. (2002). *Classroom discourse: A functional perspective*. London: Continuum] of her classroom, showing how it unfolded over time as a text, how the teacher handled different stages of learning, if and how students' prior learning and everyday knowledge were built on, if and how connections between various texts and literacy activities were made across lessons, how new learning, appropriate technical language and patterns of reasoning were accumulated as the unit progressed, and what evidence there was of students' uptake of this new learning through literate talk in their lesson contributions.

Keywords: Academic literacy; Classroom discourse; Knowledge construction; Literate talk; Macro and micro-scaffolding

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1. Introduction

Though often left unacknowledged, the early years of secondary school are as much a critical rite of passage for students as the movement from pre-school to primary school. In their review of literacy education in the secondary school years, Moje and Sutherland (2003) argue that it is 'the time when young people may first encounter different discourse communities in all their complexity' (p. 156), as they engage with different discourses and disciplines, and different teachers across the school day. In fact, a significant body of research indicates that most secondary schools are inadequately matched to the developmental needs of early adolescents, and that syllabus documents for the various disciplines provide teachers little support when it comes to relating learning to the language and literacy requirements of each subject (e.g. Greenleaf, Schoenbach, Cziko, & Mueller, 2001; Macken-Horarik, 1996, 2002). These findings highlight the need to attend to how teachers understand and communicate, and how students experience, the different competencies with, and dispositions towards language and texts that their various subjects demand.

This paper derives from our involvement in a research project in which we worked collaboratively with a number of teachers in Singaporean secondary schools to help them integrate literacy and learning in key curricular areas in order to improve both curriculum area learning and competency in English language and literacy. This offers particular challenges in a context like Singapore, which adopts a policy of 'English-knowing bilingualism' (Pakir, 1991), with English as the language of schooling from Primary 1, despite the varied vernacular language backgrounds and identities of many of its students.[1] Research evidence from both large-scale and smaller-scale classroom observations emerging over the past 2 years (Kramer-Dahl, Teo, Chia, & Churchill, 2005; Luke, 2005; Luke, Freebody, Shun & Gopinathan, 2005) suggests that even though this system has been able to yield a strong and sustained floor of basic skills and factual knowledge (as seen in standardized assessment outcomes for many students), when it comes to secondary school and the higher-order academic learning it calls for, the pedagogic focus on delivering the basics has unintentionally created a ceiling on higher-order and critical proficiency and capacity. It has also seriously hampered attempts to implement recent governmental reforms and innovations intended to shift the bias of the pedagogy from learning facts, concepts and principles to negotiated learning and higher-order work with texts, including their critical evaluation.

More often than not, teachers and students in secondary classrooms, especially in schools with large populations of students from non-English speaking backgrounds, are seen to jointly resort to coping strategies that reduce knowledge demands and language and literacy problems by minimizing oral and written interaction and the co-construction of understanding which it can facilitate. Echoing Haworth's (2001) findings in UK literacy classrooms, in the majority of

[1] Since Singapore's independence in 1965, education in English has replaced vernacular education in all schools, and along with this move, English Language has become one of the most important school subjects. The policy of giving English 'first language' position in schools was implemented for pragmatic reasons to do with Singapore's colonial heritage, the status of English as the language of global capitalism, and to bond through an ethnically 'neutral' tongue a national mix of Chinese (77%), Malays (14.1%), Indians (7.1%) and others (mostly Eurasians), who all speak their own vernacular. With English being the premium linguistic resource in Singapore's linguistic market, increasingly more families, usually those who fall into the higher income groups, speak English at home (in 2004 self-report data approximately 37.5% of primary school entrants). At the same time, students have to study as a separate academic subject the language associated with their ethnicity as 'mother tongue second language'. This bilingual policy, referred to as 'English-knowing bilingualism' (Pakir, 1991), has to be seen as the outcome of the desire to have access to Western science and technology while securing each student's ethnic identity and Singapore's 'Asian-ness'.

interactions the teacher acts as 'the controller of the spoken [and written] word', whilst 'the learners remain [more often than not willingly] in the shadows' (p. 14).

Our focus in this paper is on one social studies teacher in a neighborhood school,[2] Mrs. C, as we observed her contest this dominant monologic pattern of the teacher–student relationship and the accompanying reproductive stance towards knowledge. We intend to show how in her teaching of a unit on Singapore's Population Policies, she created a different 'zone for learning' (Cole, 1995) in her classroom. Positioning herself as 'learning and discourse guide' (Mercer, 2000), who selects and sequences activities and resources with appropriately pitched challenges and provides the necessary instructional scaffolds, she can be seen to enable her students to engage in more higher-order work with texts and in more reciprocal and cumulative forms of dialogue about their learning. These 'substantive conversations' (Newmann et al., 1996) were carried out in what Wallace (2002), drawing on Mercer, Wells and others, refers to as 'literate talk'—planned, elaborated language in which the students engaged constructively and critically with each others' and their teacher's ideas and developed principled, deep understandings of the concepts and skills taught. Mrs. C achieved this by making explicit changes in pedagogic discourse, drawing on her critical reflections about her previous way of organizing and delivering that unit in the light of a framework for effective pedagogy which we had introduced to her and her colleagues. This framework, Expanding Textual Repertoires (ETR), was intended to help teachers achieve in their work greater intellectual depth and engagement, connectivity between students' prior and new learning and between their own lifeworlds and academic knowledge, and a stronger awareness about the role of language and literacy in learning. Before we outline this framework and showcase the efficacy of its key dimensions at producing negotiated learning and higher-order ways with texts in Mrs. C's Social Studies class, let us briefly look at the larger educational context within which her classroom is situated.

1.1. Singapore educational context and the place of social studies

1997 was a crucial year in Singapore's short educational history, as it saw the launch of the government's pro-active agenda called *Thinking Schools Learning Nation* (TSLN). This reform, multi-pronged and insightfully forward-looking, attempted to re-direct a profoundly transmissionist education system to one that is future-oriented and acknowledges the need to provide students with the knowledges and skills necessary for participation in an increasingly globalized and information-saturated world. We find initiatives with comparable themes being put forward around the same time by education systems in the West, as well as Hong Kong and Taiwan, typically making reference to the need for less risk-averse workers and citizens, who are willing to continually replenish their education in order to retain their own and their country's competitive edge in the face of unpredictable futures. TSLN spawned an array of further initiatives opening more curricular choices for students and innovative practices in education, in order to develop a culture of life-long learning among the population. More concretely, critical and creative thinking and information technology were supposed to be infused into all curricular areas; syllabi in key learning areas like Science and English were substantially revised in line with this call for infusion, and in 2001, a new, hybrid subject, Social Studies, was introduced in secondary schools, a rather uneasy alliance of history, critical thinking/reading and national education messages. As Koh (2002) has argued, the admixture of critical thinking and a conservative version of national

[2] In Singapore, neighborhood schools are schools located in public housing estates with the majority of students from working and lower middle class families, many of whom speak a language other than English at home.

education which this blueprint introduced into the curriculum has generated irreconcilable contradictions around the role of education. While attempting to create a citizenry with the open and cosmopolitan outlook to 'go global', it also, in its concern about young Singaporeans' lack of knowledge and interest in their country's recent history and survival issues, has maintained a parochial vision that is preoccupied with cementing a loyal national identity.

In line with imperatives for the smart, self-regulating workforce and citizenry that TSLN envisions, the Social Studies syllabus views argumentative and source-handling skills as the most critical and cites as primary aims for teaching and learning that students can 'access and evaluate information which may provide alternative views', 'analyze these sources in terms of their reliability and utility' and 'make judgements/draw conclusions about an issue based on reasoned consideration of evidence and argument' (*Combined Humanities/Social Studies Syllabus*, 2000, p. 3). But while the syllabus seems to position teachers as enablers of such advanced reasoning and knowledge manipulation skills for their students, it leaves largely invisible the criteria – namely the necessary spoken and written language resources – needed for students' success in these areas. Also given that most teachers of this relatively new subject have no formal training, but are re-assigned from History or Geography, they are often unsure how to achieve such ambitious outcomes, as well as skeptical about the outcomes of a higher-order thinking curriculum in 'an omnipresent state that cherishes stability and order' (Tan & Gopinathan, 2000, p. 10). Therefore it is not surprising to find Nichol and Sim (2007) observing a pedagogy in Social Studies classrooms that is 'often didactic and narrow, perhaps responding to the arguably rather strident National Education slogans', rather than the 'more responsive, relevant, cooperative and inquiry-based' (p. 20) one the syllabus envisages.

Simultaneous demands on teachers to 'cover' the content, tightly prescribed in the syllabus and the sole textbook, produced by the Ministry of Education, through a list of topics and samples of typical mandated examination questions, add to their pedagogical dilemma. These pressures frequently lead to the exigencies of the examination, rather than sound pedagogical principles, driving what goes on in Social Studies classrooms. What's more, teachers often have to work against students' rather negative perceptions of the subject, which many of them, given the didacticism of the official materials, view rather cynically as 'governmental propaganda'.[3] Such perceptions in turn affect their likelihood of engaging with and committing themselves to learning the subject in the way it is intended by the syllabus.

1.2. Expanding Textual Repertoires (ETR): the larger study

The intervention project in which Mrs. C took part was part of a larger project, 'Literacy Practices in Secondary Schools: Expanding Textual Repertoires'[4], which employed a two-stage design of description and intervention. Following Rogoff (2003), Tuyay, Jennings and Dixon (1995) and Freebody and Luke (2003), we used the notion of 'repertoires' to refer to ways of engaging in activities learned from participating in cultural practices. Just what constitutes individuals' repertoires of literate and textual practices will depend on the kinds of opportunities they are given access to and take up. An important aspect of focusing on textual repertoires is

[3] In the words of students we interviewed, 'we concentrate just on Singapore', and when 'we compare it with other countries', it is to 'see how fortunate we are'. Similar perceptions about Social Studies by students are reported by Sharpe and Gopinathan (2002).

[4] This project was funded, with the approval of Singapore's Ministry of Education, by the Centre for Research in Pedagogy and Practice at the National Institute of Education.

that it allows us to view schools and classrooms as enabling spaces and teachers as enablers who provide opportunities to build students' textual practices and dispositions, make them flexible to move between ways of being literate and engaging with texts for distinctive purposes in a range of social circumstances. Thus seen, literacy and literate action involves far more than reading and writing processes, but 'the communicative processes through which it is constructed' (Santa Barbara Classroom Discourse Group, 1992, p. 121).

Working with 18 teachers in three neighborhood schools over one and a half years, the aims of the project were to obtain a picture of the nature of textual repertoires that Singaporean students currently assemble in secondary school in the key learning areas of English, Social Studies and Science, and to design and carry out an intervention program. The curricula of these subjects have recently undergone substantial revision, due to the infusion of critical and creative thinking and IT, and the recognition, along with it, of the necessity for teachers to address new and broader literacy demands explicitly and systematically in their classrooms. In the intervention phase, teachers were provided with a six session subject-specific professional development course designed to extend their knowledge about the literacy demands of their respective curriculum areas and effective ways of making these explicit, and to help them reflect upon and improve their teaching practice where necessary. In collaboration with the researchers, they then developed and trialled teaching materials and tasks in the light of these broadened understandings, refining and modifying them by ongoing analysis of the classroom learning environment and their students' responses.

The data used for this paper are drawn from the second, intervention phase of the project, with a specific focus on those obtained from Social Studies classrooms. During this phase the data comprised between 4 and 15 h of authentic classroom practice by each teacher, along with the accompanying teacher resources and student artifacts, policy statements on curriculum in the three subjects, as well as interviews with the teachers and the students. These varied sources facilitated the kind of triangulation necessary for the analysis of the interaction of literacy, official curriculum and classroom practice.

The classroom observation system for the larger study combined iterative, qualitative note-taking and event-mapping with a quantitative coding process. On-site note-taking captured, in the form of a running record, (a) teaching/learning activities and tasks, and time spent on them; (b) types and levels of participant interaction, (c) types of text and other resources and modes of engagement around them, and provided space for any theoretical, methodological and personal comments (see Cairney & Ruge, 1998). These notes provided the basis for subsequent representations and analyses, foremost the construction of visual contours of the entire unit that had been observed. These contours, like multi-layered musical scores, allowed for the plotting of key events, along with their participation structures and semiotic resources, as they varied across lessons within each class, and of cycles of activity that occurred over time and often went beyond lesson boundaries, such as a sequence of events preparing for the major writing task of the unit. The ultimate purpose of this mapping was to construct an understanding of what counts as doing and knowing English Language, Science and Social Studies in these classrooms and, more specifically, to document what opportunities they offered for student learning of higher-order cognitive and linguistic work with texts, and to examine the extent to which these constructions align with what the syllabus advocates.

1.3. The framework for analysis and intervention

To devise the framework in order to help us code and analyze, and subsequently help our participating teachers reflect on, their classroom lessons, we drew on two bodies of documents:

the syllabi of the various subjects and the kinds of language and literacy competencies they call for, albeit often inexplicitly, and a growing body of research in US, Australia and the UK on those pedagogies that lead to improved student outcomes across curricular areas. In particular, our framework builds on that developed by the Queensland School Reform Longitudinal Study (QSRLS) research team (Lingard et al., 2000), which itself was a more firmly theorized extension of the 'authentic pedagogy' construct developed by Newmann and Associates for Chicago schools in the 1990s (Newmann & Associates, 1996). In the Newmann study, teaching and learning were considered authentic when

- learning was focused on the construction of knowledge;
- the cognitive work of learning involved disciplined inquiry, which builds on prior knowledge, strives for in-depth understanding, and the expression of ideas through elaborate, literate communication; and
- what was being learned was seen as having value beyond school (Lingard, Hayes, & Mills, 2003; Newmann & Associates, 1996)

Since the focus of our project was on textual repertoires, we made a number of alterations to this framework. Informed by studies that developed observational scales specifically for effective literacy instruction (e.g. Allington & Johnson, 2002; Langer, 2001), we deleted some of its components, redirected the focus of others, and made more delicate distinctions in yet others. Most notably, a cognitive dimension like higher-order thinking was found to be problematic as it is only inferable rather than directly observable through classroom discourse and/or written textual productions. It is a commentary on the types and levels of cognitive processes rather than an explication of how high intellectual quality work in curricular areas like Social Studies is constructed through its language features.

Furthermore, what is missing in the 'authentic pedagogy' construct is a clear acknowledgement that classrooms are sites for the shaping of knowledge and students' epistemological stance towards what is being taught, read and written. These issues are vital in any attempt to identify whether the advanced ways of dealing with texts that are the foundation of secondary schooling are being taught and learned. These elements, to do with the selection and representation of knowledge, the technicality and conceptual complexity with which it represented, and the stance with which it is explored, were added. According to Luke, Cazden, Lin, and Freebody (2005), features like knowledge representation and epistemological stance, 'unlike cognition, are visible, traceable and documentable in the observation of classrooms via a focus on classroom discourse, behavior and textual artifacts' (p. 15). Hence this first dimension has been renamed, in line with QSRLS, *intellectual quality*.

While the quality of learning about knowledge and texts addressed in classrooms is central, it is also clear that students' learning is enhanced in an environment that directly supports learning socially and cognitively. This is especially the case for Singapore neighborhood school populations, which are diverse culturally and often from non-English speaking homes. Building on Bernstein's (1990) comments on 'visible' and 'invisible' forms of pedagogy, and his critique of invisible pedagogy as disadvantaging non-mainstream students, and augmenting this work with the premises of recent research by Australian and North American literacy educators (Cope & Kalantzis, 1993; Delpit, 1995; Halliday & Martin, 1993; Schleppegrell, 2004), we have given *explicit instruction* the status of one of our three dimensions. As these researchers argue, learning to be literate in the expanded ways that are necessary for formal apprenticeship in curriculum areas and in a literate society cannot be left to incidental, indirect processes, especially not for

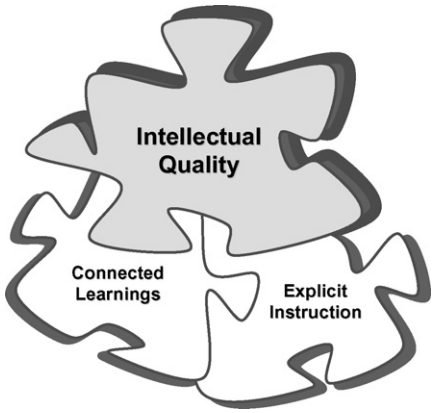

Fig. 1. Three dimensions of coding classroom talk.

students with diverse learning needs. This prompted us to outline in the items clustered under *explicit instruction* various aspects of what quality learning environments for all need be explicit about. We suggest that it is focused instructional talk that unlocks the doors to the literacy achievement of students, explicating for them, among other things, the processes and strategies that are required to come up with quality executions of literacy tasks, and the criteria against which their textual productions will be assessed.

Similarly, we have elevated *connected learnings* to the status of a key dimension of our analytical framework, thus acknowledging the various ways in which teachers can link students into the new knowledge presented to them and make it meaningful and purposeful for them (see Gibbons, 2003; Langer, 2001). Effective teaching can be seen as a series of orchestrated moves or 'shuttles' (Gibbons, 2003) between kinds and levels of knowledge, be they between personal, everyday and technical knowledge, between school knowledge and the world beyond school and between knowledge in different disciplines. Very importantly, there has to be a sense of coherence built up as the 'longer conversation' (Mercer, 1995) of the classroom unfolds, with the activities and texts within each lesson clearly connected to each other, and the lesson itself a mere turn in the larger text of the classroom that develops over the unit, where competencies with knowledge and texts are being progressively built up.

Fig. 1 below illustrates the relationship between the three dimensions, showing that (1) intellectual quality is central to a pedagogy that leads to high quality student work with knowledge and text, and (2) that it is the 'whole cloth environment' (Langer, 2001, p. 868), that is, all three dimensions working in conjunction with one another, which are important if students are to benefit from high intellectual quality exploration of knowledge and text.

2. Analysis

In the following analysis our focus is on Mrs. C's Upper Secondary Social Studies class, which with its 28 students was ranked as the lowest performing among the three classes we studied in her school. As the school's head teacher for the subject, Mrs. C was instrumental in planning the unit under observation. Our analysis also shows that while her classroom shared tasks, materials and ultimate learning goals with the other two classes, Mrs. C enabled the members to engage with them in rather unique ways. Specifically, what gave it its characteristic 'fingerprint' (Heritage

& Greatbach, 1991) was the close alignment between learning goals and interactional patterns, the nature and intellectual quality of the interactions, the accompanying discourse, the relatively open ways the students were physically positioned in the various activities and engaged in them, as well as the fluid boundaries between the various activities in each cycle.

In the analysis of the interactions in Mrs. C's Social Studies class we are adopting the view that literate knowledge is constructed in and through the dynamics of everyday classroom life, which provide students with opportunities for textual engagement, dialogic interaction and ultimately expansion of their literacy repertoires (Freebody & Luke, 2003; Santa Barbara Discourse Group, 1992; Tuyay, Jennings, & Dixon, 1995). Our focus will be particularly on the communicative processes which embed the potential for generating students' literate talk, that is, talk which is elaborated to take account of the likely expository function in classrooms where joint intellectual work is carried out (Wallace, 2002, p. 106). In essence, we will examine how the literate practices in Mrs. C's class are planned and 'talked into being' (Freiberg & Freebody, 1995), as she and her students negotiate the norms and expectations as well as roles and relationships that frame how they will engage with the knowledge being presented and with one another. In order to show how this complex negotiation is enabled in Mrs. C's classroom, we have, in line with Wells (1995) and Van Lier (1996), conceptualized it as involving two levels of activity, the 'macro' and the 'micro'. At the macro-level of teaching, the concern is with how the teacher initiates the larger unit and decides on appropriately pitched activities, along with the necessary material and semiotic resources, through which to address its theme and on their appropriate ordering, pacing and participation structures, so that the students' understanding of the chosen topic can be built up and extended. On the micro-level the focus shifts to the teacher's moment-by-moment interactions with her students in the classroom, as a whole class, in groups or one-on-one, as she supports their engagement with the activities set and responds in ways that enable their satisfactory completion (Wells, 1995, pp. 258–260).

Although, due to the constraints of space in this paper, our analysis can only be brief, we will first describe how at the macro-level, as chief initiator, Mrs. C selected, sequenced and introduced the various communicative activities through which she could deepen her students' understanding of the given topic, and then look at how, as facilitator, at the micro-level, in the moment-by-moment co-construction of meaning, she observed how her students, both as a group and as individuals, responded to the activities she had initiated and assisted them, in whatever ways she deemed appropriate, to achieve the negotiated goals. We hope that this analysis at the two levels of activity, albeit sketchy, will nonetheless provide valuable glimpses into the overall planning decisions and specific discourse structures, strategies and processes that contribute towards the knowledge construction through literate talk and action[5] among Mrs. C's students.

2.1. Macro-scaffolding: planning the unit on Singapore's Population Policies to ensure connected learnings

Observing, transcribing, and working with our teachers on, larger pedagogical units, or 'curricular macrogenres' (Christie, 2002), was central to our intervention design, its importance having been highlighted by a number of classroom researchers (Christie, 2002; Gibbons, 2003; Green & Dixon, 1993; Heras, 1994). The focus on ongoing sequences of lessons, rather than individual

[5] Following the Santa Barbara Classroom Discourse Group (1992), we are using the term 'action', as opposed to behavior, to signal the intentionality behind the interactions that take place in classroom discourse, where student participation is deliberate, goal-directed and can therefore be held accountable.

ones, allowed us to examine how the teachers managed different stages of learning, for instance, how the theme of the unit and its various tasks were introduced, if and how connections between various teaching and learning activities and texts were made across lessons, and how new learning and language were accumulated and taken up by students as the unit progressed. In line with our dimension of connected learnings, this focus could pinpoint how coherence was, or failed to be, established, on the macro-level of the unit; with regard to our dimension of intellectual quality, it could reveal whether there were indeed changes and evidence of developmental progress in the language used, especially by the students, across a sequence of activities and lessons, thus attesting to a form of what Halliday and Martin (1993) calls 'logogenesis', i.e. growth in language and learning in the unfolding text of the classroom.

The unit on Singapore's Population Policies, which we observed Mrs. C deliver during both the description and the intervention phases, involved two 60-min and two 90-min lessons, carried out over 2 weeks. The overall sequence of activities as Mrs. C planned them in her revised, post-intervention unit was markedly different from her previous way of teaching in its overall architecture, in participation structures and in ways of handling knowledge. The typical picture of social studies that had emerged from our analysis of the units as taught by the five teachers we observed during the description stage was a traditional one, with their subject understood in terms of 'citizenship transmission and simplified social science' (Sim & Print, 2005), not one encouraging the kind of participative, active learning about civics and citizenship which the syllabus, at least in its general pronouncements, calls for. The sequencing of teaching and learning activities we initially observed was tightly scripted by the textbook and its way of carving up the topic, and by activities in the workbook accompanying the textbook. Much of the textbook material was delivered by the teachers in the form of lectures and subsequent answer-checking IRE sequences, and the workbook activities, including the occasional one that called for advanced knowledge manipulation, were carried out in a formulaic manner as routines to be run through, either through individual seatwork or occasional group work, again checked through IRE exchanges. The units culminated in an independent writing activity, which in all five classrooms took the form of a response to a prompt of past years' examination questions, which tested students' factual knowledge about various policies and the rationales for them provided by the government.

For the professional development work with the teachers, we invited them to re-visit the unit we had observed earlier in the year by means of the multi-level contour we had constructed of it, augmented by transcripts of its key teaching episodes. Together, these enabled them to see more clearly how the unit had built their students' knowledge and learning. The visual unit representation highlighted the cycles of activity within it, the flow or lack of flow between various activities and tasks, the interaction structures they had chosen for each and the time they had allowed for them to be brought to conclusion. It also showed the use the teachers had made of texts and other resources, the intellectual work they had asked their students to do with them and the ways in which the students had responded. The ETR conceptual framework for enhancing the quality of pedagogy, which we had introduced in more general terms to the teachers earlier, helped us to provide a set of lenses, and specific questions, for the teachers through which to analyze and where necessary, re-envision the ways they had selected and orchestrated the various teaching and learning activities in their unit. (For the set of questions given to the teachers to conduct a focused review of their unit, see Appendix A.) The following section will describe the changes that, with Mrs. C as head teacher in charge, the Social Studies teachers in one school decided to make at the macro-level of the unit. At this level, as Wells (1995) views it, 'the teacher, like the conductor of an orchestra, is concerned with continuity and coherence', and with engaging the students in activities that 'stretch their capacities and lead them to extend and deepen their understanding'

of the unit topic, 'making sure that the work that emerges from the sum total of the individual performances is recognizable in terms of the cultural score' (p. 259).

The increasing understanding in knowledge and language that Mrs. C's students were able to gain in the revised unit can be seen if we look at the way she planned to offer a developmental sequence of learning along two interconnected continua, that of 'field', or knowledge the students would be asked to construct about social studies, and that of 'mode', the nature of the semiotic challenge they would encounter when mediating that knowledge (see Macken-Horarik, 2002, for an extended discussion of these continua).

2.1.1. Building up the field

To move students along the field dimension, teachers have to consider the nature of the specialty they want their students to learn about. This entails, as Macken-Horarik (1996) suggests,

> that they think through the learning goals for the unit of work they are planning. In the process of introducing students to the field, they will need to ascertain where the learners 'are at' already with respect to the specialized knowledge demands of the discipline. If their goals for learning include a more critical focus, they will need to explore issues surrounding the field and its applications with their students. (p. 249)

The learning goals Mrs. C had set for the revised unit included both mandated curricular and critical knowledge. Her long-term vision was to take her students from their current everyday, commonsense experience beyond the specialized knowledge privileged in their textbook and the year-end examination, by providing them with opportunities to use that knowledge base to take up increasingly diverse, and at times conflicting, perspectives on the topic, those by governments in other countries as well as those of ordinary Singapore citizens at the receiving end of their state's policies. This 'ever-expanding foundation of shared knowledge' (Edwards & Mercer, 1987) about Singapore's population policies was facilitated through the kinds of texts she would make available to the students at various points during the unit. They were rich, varied in country of origin, medium and viewpoint, with the textbook chapter merely constituting a point of departure to establish the necessary background and skeletal 'facts' of various shifts in policies. As soon as these basics were in place, texts with new voices and viewpoints would be introduced, some of them problematizing the assumptions on which Singapore's population policies have been based. Early on she brought in updated news articles and on-line materials which presented the most recent policy developments in Singapore, as well as first-person accounts of how these policies have impacted on ordinary people. In addition, in order to open up further critical perspectives, she no longer relied on the sprinkling of accounts in the textbook about population policies in other countries, strategically inserted for comparative purposes, and, more often than not, in the words of the students, intended to 'make us [Singaporeans] see how fortunate we are' (focus group interview with Mrs. C's students). Rather, she selected primary sources in the form of current on-line and magazine texts as well as chose to consult international students in her class to gain broader and more direct insights into how other countries, such as India, Japan, Germany and Italy, have dealt with the issue of an ageing population. Different groups of students would be asked to take responsibility for becoming 'primary knowers' (Berry in Gibbons, 2001) with specialist knowledge of particular countries, and to present their findings and viewpoints to the whole class, thus paving the way for such activities as class discussions in which the strengths and weaknesses of various local policies were compared and alternatives considered. These were held at strategic points in the lessons when Mrs. C felt the students knew enough about the relevant policies and their social implications, as well as of the relevant register, to participate effectively.

Towards the end of the unit, with the relevant resources in place, Mrs. C would initiate the greatest intellectual and linguistic challenge of the unit. Making sure that the students had accumulated a rich, interconnected web of information about population policies and their impact in various countries and had also had a chance to interview family members and older relatives to obtain the immediate views of ordinary people on these issues, she would ask them to stage a complexly orchestrated governmental feedback session. Some acting as older citizens, others as young couples and yet others as social workers, they had to provide suggestions for policy improvements to a panel composed of their peers, who played government representatives and who in the end had to evaluate, and make decisions on the various suggestions offered. In this final classroom event the social contingency of the knowledge the students had built up would became most apparent, as the students had to mediate, and shuttle back and forth between, varied perspectives, those of experts and governments as well as ordinary citizens from different interest groups, on the issue of ageing population. And having had the opportunity to co-construct with their classmates and their teacher such texts which problematize governmental policies from the point of view of those in society whom they affect most immediately, students gained access to the key ideational resources needed for the end-of-unit writing assignment that Mrs. C and her colleagues had devised. For this assignment, to be done independently at home, students were to produce a proposal suggesting amendments to, or ways of finetuning, present policies to cope with an ageing population—an appropriate way of rounding up a unit that would establish, but go beyond, the foundational understandings of the policies and their rationales and require the students to take a more critical stance to evaluate their social impact.

2.1.2. Gaining control of literate talk

At the same time, Mrs. C also moved the students along the 'mode continuum' (Martin, 1993), from more context-embedded to more context-reduced language. (For Martin this continuum captures not simply the movement from spoken to written language but also one to greater 'semiotic distance'.) Although language is not Mrs. C's curriculum specialty, she is keenly aware that one of the main challenges for her students is to gain control of the reduction in context-embeddedness that academic discourse in general, and the formal register of social studies in particular, requires. As Gibbons (2006) explains,

> . . .language development is partly realized by the degree to which learners are able to produce explicit text; the language of the 'here and now' develops long before the child learns to reconstruct their experiences through language alone, or to express generalizations. It is the ability to produce the increasingly more explicit text in academic contexts – text that is independent of the immediate situation the writer [or speaker] is in, . . .where there is greater demand placed on the learner's lexico-grammatical resources. (p. 36)

When plotting the cycles of teaching and learning activity in her revised unit, Mrs. C paid close attention to fostering the development of more context-reduced, written-like language that the students increasingly needed in order to mediate the knowledge built up along the field dimension, using strategies like oral, hands-on work in groups and prior rehearsal of their class presentations in smaller groups by means of visual supports like diagrams, mind maps and flowcharts. For the more complex tasks she also encouraged the students to make outlines and notes as they brainstormed ideas and developed lines of argument in their small groups, in order to assist especially those anxious to speak in a public forum with sharing their ideas in a more fluent, organized way with the whole class later.

In the activity cycle which initiates the unit, Mrs. C's main concern was with ensuring that, after the assigned homework reading of part of their textbook chapter, the students were familiar with the basic knowledge about Singapore's population policies over the past 40 years. Already at this stage, she decided not to employ the usual introductory teacher-lecture or answer-checking IRE routine; having examined the information-dense presentation of the foundational knowledge in the textbook, she started off with a group work activity in which, facilitated through a time line graph to be completed, the students were asked to focus on the rationales and consequences of the various population policies adopted by the Singapore government since independence, and then to report their findings and patterns observable within them to the class. This teacher-guided reporting evolved into a more open discussion, to which the three international students were invited to contribute by sharing their first-hand knowledge and views about population trends and policies in their countries.

This unit-initiating activity cycle around the 'received' knowledge of the textbook contained, albeit in embryonic form, the cluster of stages (Stages 1–5 below), each with its own pedagogic purpose, which would be repeated three more times over the course of the unit, with the subsequent replications involving students' interaction with increasingly more complex and diversified knowledge.

Stage 1: Setting up of task ahead, with relevant texts and other resources (teacher to whole class)
Stage 2: Working with resources in the light of task/question posed (small group activity)
Stage 3: Sharing what has been discovered and insights gained (teacher-guided reporting to whole class)
Stage 4: Discussion of ideas presented during Stage 3 (whole class)
Stage 5: Evaluation of outcomes and students' performance in Stages 3 and 4 (teacher to whole class)
Stage 6: Writing of proposal based on understanding gained from Stages 3–5 (individual activity)
Structural description of unit structure: $(1\wedge 2\wedge 3\wedge 4\wedge 5)^{n} \wedge 6$ ($\wedge$ = followed by; ^{n} = recursive).

Just like the opening cluster of teaching and learning activities, each subsequent one would open with a procedural segment in which Mrs. C set up the major task ahead, along with introducing the activities and textual resources through which it was to be carried out. Wherever possible, she would conceptualize the task in a way that allowed her to assign different groups to different aspects of, or perspectives on its topic, in part to provide for a more authentic communicative situation for the subsequent whole-class reporting and in part because such diversified topical examination was also likely to help the students end up with a broader picture of the overall topic than any group would have been able to arrive at on their own. Because of the frequent complexity of the task involved, this stage tended to necessitate Mrs. C's extended verbal and written instructions (Stage 1). Task execution would begin with the often highly spontaneous and context-embedded hands-on discourse characteristic of small-group work, anchored as it is in the 'here and now', with students gathering, exchanging and organizing ideas, usually with the help of, and around, a set of visual cues, as well as rehearsing in a small forum (Stage 2). This was followed by literate teacher-guided public talk, in which the various groups reported to the wider, whole-class forum their findings, and the broader understandings they had gained from sharing their views in their prior group work (Stage 3). Since this required the communication of ideas that were likely to be new to the others in the class, the reporting students' talk had to take the form of lengthier, more coherent and

explicit contributions that could stand alone. During this stage, Mrs. C would typically 'lead from behind' (Gibbons, 2001, p. 265), by attending, via probing and reformulation moves, to the needs of the speakers and the meanings they were trying to construct so that they could achieve a more comprehensive account than they were able to do on their own. Subsequent whole class discussion (Stage 4) would usually require the production of language that recontextualized and critiqued what was learned earlier, since the representatives from each group had to lay the grounds for their viewpoints open for scrutiny and query by their classmates. Bringing the cycle of activity to a close would be a debriefing by Mrs. C, in which she reviewed and evaluated both the processes of learning and its outcomes. By the time the students had reached the end of the unit, then, the appropriate linguistic resources would have been made available for them to carry out the proposal writing task (Stage 6), in which they had to demonstrate their capacity to construct coherent texts, independently and for an unseen audience, that would draw on, and negotiate between the various relevant voices and perspectives on the issue introduced to them earlier.

The critical features of the scaffolding on the macro-level (Van Lier, 1996; Wells, 1995) which Mrs. C provided in her unit can best be represented in the following figure (Fig. 2), which, along with the gradual building up of the field indicated on the vertical axis, also captures from left to right the movement in mode which occurred as the students shifted from more to less context-dependent, and from informal, spontaneous to more literate, planned language.

Given its internal recursiveness and the fact that it had become established as a fairly consistent activity structure pattern with Mrs. C's class since the beginning of the school year, her way of structuring the curricular macrogenre had built up an orientation that her students had come to expect and thus allowed both her and her students to give less and less attention to 'choreographing the activity and more to the academic content' (Cazden, 2001, p. 101). In fact, what struck us as one of Mrs. C's most salient strengths was the smoothness with which she conducted the various activities and tasks, despite their increasing conceptual and classroom-organizational complexity, and oversaw their temporal unfolding within and across the activity cycles of the unit. Very little class time had to be spent on procedural or regulative talk, since her skillful orchestration of small and whole-class discussion forestalled major 'interactional traffic jams' (Erickson, 1996), as she moved from group to group in rhythmically regular, fast-paced cycles 'aligning the students with each other and with the content of the academic work' (O'Connor & Michaels, 1996, p. 65) to be accomplished.

2.2. Micro-scaffolding: co-constructing and communicating knowledge of intellectual quality through explicit instruction

In the unit's overall planned sequence and the various challenges it set up for the students it was especially the activities of teacher-guided reporting and following whole-class discussion (Stages 3 and 4) which played a vital role in achieving the aims of students' co-construction of knowledge through literate talk. These activities within the broad macro-scaffold just outlined, and the contingent nature of the ideational and linguistic support which Mrs. C provides in some of the episodes of discourse which realize them, will be the focus of the following sections. Pedagogical work at this micro-level, in the moment-by-moment unfolding of the classroom talk, when teachers have to respond contingently to what their students put on offer, is perhaps even more complex; in fact it is so multidimensional a challenge that, as O'Connor and Michaels (1996) have pointed out, it has rarely been captured fully in the research literature. Inviting us to consider the scenario of a teacher who uses the activity of large-group discussion to foster her students' participation in thinking through a particular problem, they elaborate:

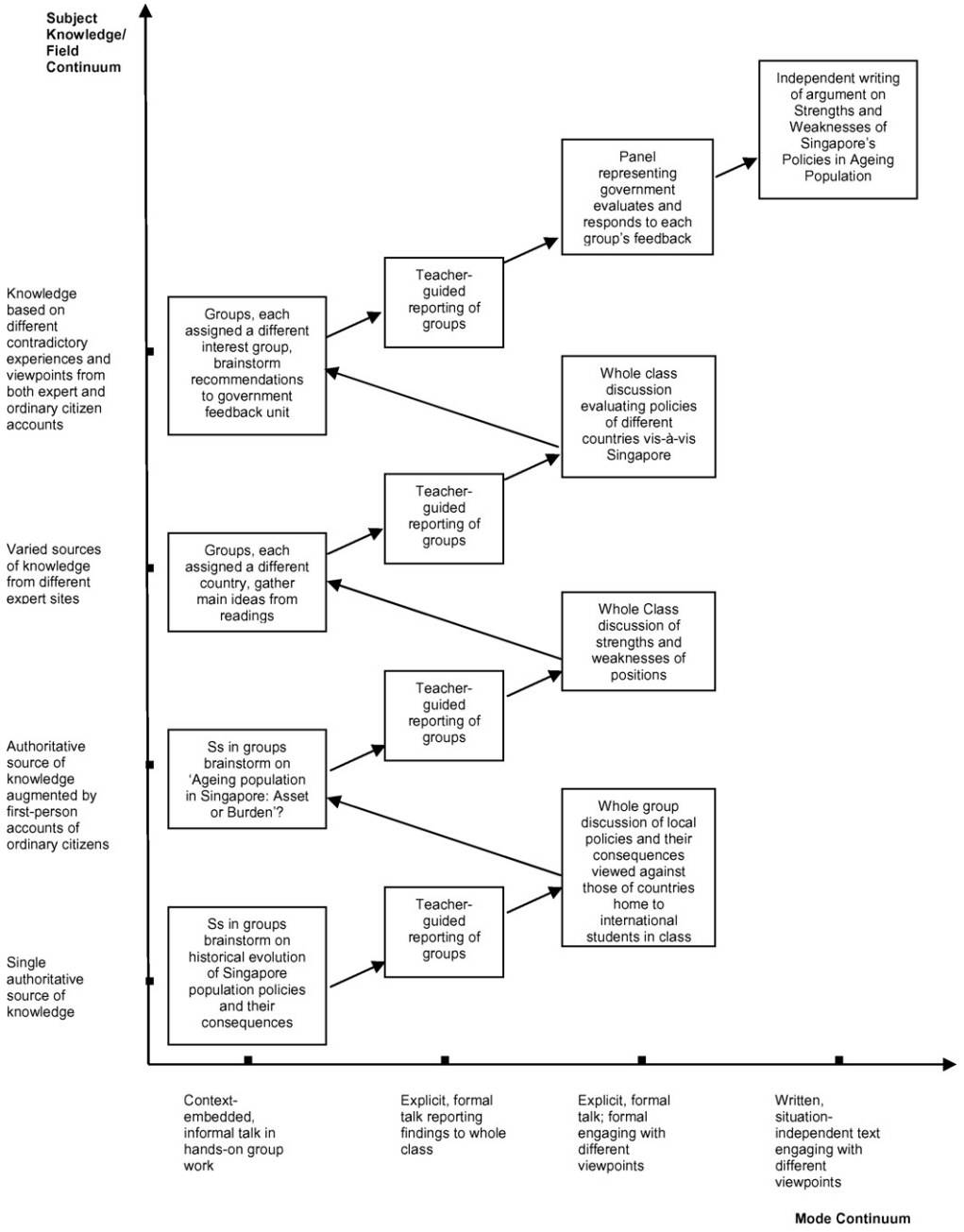

Fig. 2. Macro-scaffolding in Mrs. C's unit.

Imagine further that the teacher is committed to giving each student equal access to the intellectual enterprise, and that the students present a wide range of linguistic backgrounds, attitudes and academic resources. The teacher must give each student an opportunity to work through the problem under discussion, whether publicly or privately, while simultaneously

> encouraging each of them to listen to and attend to the solution paths of the others, building on each other's thinking. Yet she must also actively take a role in making certain that the class gets to the necessary goal. . .. She may need to make judgments about what to avoid, or lead away from topics or methods for which many of them are not prepared, whole not squelching those who make problematic contributions. Finally, she must find a way to tie together the different approaches to a solution, taking everyone with her. (p. 65)

The complexity of such tasks can perhaps help explain why, as the following section of our analysis shows, despite bringing about unusually frequent collaborative moments in her classroom there are also times when Mrs. C exercises her leadership in a rather directive manner. Simultaneously following up on, and extending one's students' contributions and also ensuring that the ongoing classroom conversation moves into the direction required to achieve the academic objectives of the current activity is a difficult balancing act, especially given the real-time pace of spoken discourse. Hence we will see instances in the following where Mrs. C, in her attempt to get the class to her planned learning goals, especially at key junctures when she felt a certain shared understanding had to be put in place for the next activity, manage interactional patterns in her classroom so tightly that they risked closing off rather than promoting opportunities for her students to engage with progressively more complex ideas through elaborated talk.

2.2.1. Intellectual quality

The intellectual quality of a lesson can be probed along two principal dimensions: 'manipulation of knowledge' and 'substantive communication'. The first is often realized and developed through classroom tasks or activities that require students to treat information and ideas in a way that allows them to evaluate, synthesize, hypothesize and draw general conclusions in order to add value to the information and ideas presented to them. In other words, students are led to *transform* existing knowledge in order to produce new (for them) knowledge, rather than merely assimilate and later reproduce existing knowledge and be positioned as mere 'doers' of the pedagogy. The second focuses more on the nature and quality of the interactions between teacher and students and among students. The chief concern here is whether the teacher and students are seen to engage in an extended and sustained discourse that promotes collective understanding of the subject matter. This is in line with Alexander's (2004) recent advocacy of 'dialogic teaching', which emphasizes reciprocal and cumulative classroom interactions which lead to a shared and purposeful building up of knowledge and understanding. Thus, what counts as 'substantive communication' are not long teacher monologues that tend to foreclose or preclude student–teacher interaction, or routine IRE sequences that do not open up opportunities for students to discuss a topic in greater depth or teacher–student exchanges about some trivial subject, but a *sustained and substantive discussion about* some *key idea or issue*, often initiated by the teacher but with the students taking up the discussion and actively and spontaneously contributing to this co-construction of knowledge and learning.

2.2.1.1. Structuring classroom talk to encourage knowledge manipulation. As mentioned earlier, in the opening lesson and activity sequence of the unit, Mrs. C organized the class into small groups and, using a worksheet based on the textbook materials got them to focus on the rationales of the various population policies adopted by the Singapore government since the 1960s. In the subsequent group reports, we see her demonstrate her ability to initiate and direct interactions in ways that afford her students with opportunities not only to understand basic knowledge, concepts and issues pertinent to the topic of overpopulation, but also to manipulate and co-create new knowl-

edge over and above what they can read from the textbook. She does this by, for instance, tapping on the specialized knowledge of the international students in her class in order to help the class better appreciate the meaning and impact of overpopulation. In the following excerpt taken from this lesson (Excerpt 1), she calls upon Arul, a student from India, whom she refers to as the 'guest speaker', to share with the class whether he thinks his country is overpopulated and how he can tell.

Excerpt 1[6]

1.	T	Arul, let's hear from you. You come from India. Come, share with us about your country. Do you find that your country is overpopulated? How do you know it's over populated? Kay, let's hear from Arul. He is our guest speaker.
2.	Arul	[xxx] because many people are (very) [xxx]
3.	T	Excuse me?
4.	Arul	In the streets - on the streets [xxx]
5.	T	Yah, so the fact that there are many people on the streets. [Class laughs]
6.	Arul	[xxx] actually you don't see it [Teacher prompting class to be quiet] unless you visit some foreign country.
7.	T	What- What do you mean? You want to explain?
8.	Arul	When I came here, then I realize that it is very populated. Otherwise, we just- It's a normal life. So-
9.	T	Oh, so to you when you were there is very normal? People on the street, is. . . normal? But when you came here-
10.	Arul	When I came here, [xxx] it is [not] so populated here, you seldom see any people walking around.
11.	T	Here, or?
12.	Arul	In some streets.
13.	T	Here or your own country?
14.	Arul	Here
15.	T	Ok, so if you were to tell us, what then is the government doing about it? In your country, do you know?
16.	Arul	I mean . . . they are trying to reduce birth rate.
17.	T	Trying to reduce birth rate. Ok. . .
18	Arul	So. . . it's so populated that they are out- is out of control.
19.	T	Out of control ok? [Class laughs] Note his word is 'Out of control' huh. Ok, Arul. If you had a chance, Shhh, to be the government and you said 'I'm going to do something about the population', what would you do? [Some commotion in class]
20.	SS	[xxx] no chance
21.	T	[To the other students] You don't have the chance?
22.	Arul	[xxx] use this measure.
23.	T	You will use this measure. What is this measure?
24.	Arul	Erm, give.. give.. set up [xxx]. Set up family planning and population board.
25.	T	Ok, so this minister says that he will set up a family planning board huh.

Even though Arul has difficulty explaining his observations initially, he does manage, with Mrs. C's patient prompting, to get the point across that India's overpopulation is evident in its crowded

[6] Transcript conventions:

[xxx]	Recording is inaudible
[. . .]	Turns which have been left out
. . .	Short pause
12	Numbered turns in transcript
// //	Overlapping speech

Note also that we have retained the grammar, lexis and idiomatic expressions, including the use of discourse fillers and Singapore English pragmatic particles, used by the teacher and students in all our transcripts.

streets, which he thought was 'normal' until he arrived in Singapore and noticed its relatively sparse streets (turns 9–15). This shows Mrs. C's ability to take advantage of the specialist knowledge of the international students in her class to enrich their understanding of overpopulation by looking at the situation in other countries. This has the dual effect of broadening the Singaporean students' knowledge and perspective beyond Singapore and actively including non-Singaporean students in the discussion about Singapore's population policies, which can otherwise appear irrelevant and hence become disengaging for these international students.[7] More importantly, this excerpt also shows Mrs. C's ability to get her students to not only create new knowledge but also to assess it. Having elicited Arul's observation about his country's state of overpopulation, she first asks him what his country's government has done about the situation and then what he himself would do if he were part of the government (turns 16–20). This series of questions clearly goes beyond connecting with the student's pre-existing knowledge and getting him to share it with his classmates. In asking Arul what he would do if he were part of the government in India, Mrs. C is in effect getting him to assess his government's efforts in coping with overpopulation in order to formulate recommendations to improve the situation. In this way, Mrs. C is trying to hone his skill in *evaluation*, which is integral to 'manipulation of knowledge'. Furthermore, in the line of questioning that Mrs. C engages in with the student, she is also modeling the way she wants the rest of the class to engage each other in this sort of knowledge construction and manipulation, as the subsequent exchange shows:

Excerpt 2

28.	T	Ok, I've asked Arul whether two or one is more effective. He said that he doesn't think any one will be effective. Why, Arul?
29.	Arul	Because there would be people like- Who will try to like [xxx] the government, they can be- they can be very serious [xxx]. First, I will try to make the government very serious.
30.	T	Make the government serious? [Class laughs] Ok, he's trying.. Ok.. Unless the government is very serious about it. Why.. What do you think is holding the government back from really, erm, putting a policy that is successful? Now, notice I'm asking all the questions uh. Afterwards, you will ask Mae questions, all right, about Indonesia.
31.	SS	Woohh.. [Tone of anticipation]
32.	T	Ok, so don't look at me afterwards. It's your turn to ask questions.

By getting her students not only to articulate but also evaluate (practices and policies), and modeling the process by which they can achieve this goal, Mrs. C is able to make her lesson a rich interactive and cognitive experience for her students, one where they are made to grapple with the realities and challenges of policy making (in terms of how governments could respond to the issue of overpopulation, for instance) rather than merely accept superficial, textbook definitions and academic explanations of the concept of overpopulation. As we can see, new knowledge is constructed by the students themselves; the teacher merely provides the structure to facilitate this learning and, significantly, the necessary model and encouragement to help them along. This purposeful and explicitly signaled scaffolding not only supports students in their intellectual development but, crucially, also provides them with the linguistic strategies, such as asking questions to probe for explanations (turn 7), views and ideas from different perspectives (turn 19) and justifications (turn 28), to engage in sustained and substantive discussion both between teacher and students and among students.

[7] The Social Studies syllabus requires students to compare Singapore's population policies only with Japan's and not any other country's.

There is, however, more that could be done to scaffold these students' learning to further improve the quality of thinking and learning. First, she could have prepared Arul and other international students in the class *beforehand* to share their observations and critical assessments of their own country's situation with their classmates via some specific questions aimed at eliciting their background knowledge and critical evaluation of their country's population policies. This could then have pre-empted Mrs. C's repeated interjections and promptings seen in Excerpt 1, which arguably disrupted rather facilitated Arul's flow of thinking and attempt to articulate his ideas. Moreover, in asking Arul how he can tell if India is overpopulated, Mrs. C could have raised her students' awareness about the whole concept of overpopulation and how it is defined and measured, that it is sometimes more than a matter of abstract numbers but something which involves people's perceptions as well. In other words, she could have helped her students to see the critical significance of her questions – 'revealing the questionability of what is questioned' (Gadamer, 1998, p. 363) – rather than merely using them to help her students create and manipulate knowledge.

2.2.1.2. Student uptake. A key defining characteristic of the manipulation of knowledge is not merely the teacher's ability to structure meaningful and intellectually stimulating classroom talk but, crucially, also evidence of students' uptake as they engage spontaneously in discussion with one another (Kramer-Dahl et al., 2005). Some evidence of this student uptake can be seen in Excerpt 3 below taken from the same lesson:

Excerpt 3

33.	T	Let's start from Jie Cong. Yes, Jie Cong you have a question for Mae.
34.	Jie Cong	Erm, are you happy with the government rules?
35.	Mae	Er.. not really.
36.	T	Louder, they cannot hear you.
37.	Mae	Because.. Not really. Because I think, erm, the government is not very strict in enforcing the laws and orders, including the population growth. //
38.	T	//Louder//
39.	Mae	Yah.. and .. I think .. Orh, I think after the. . . new president, I mean after the Suharto president, quite a lot of things went out of the.. er, rules because the presidents are trying to get more votes. //
40.	T	//Louder. Louder//
41.	Mae	So, they can't really enforce really strict laws to the people as they'll lose all the supporters. So they have to be very careful in planning and to be honest, not many of them did a very good job.
42.	T	Ok, another question for her. That's a very, very deep insight from.. from Mae. Yes, Marshall. You have a question.

Mrs. C's role in this short exchange is limited to prompting the student, Mae, to speak up and complimenting her at the end. Mae is able to independently respond in a fairly intelligent and coherent way to her classmate's question. In her response she does not merely offer her view that the Indonesian government has not been strict enough in enforcing its population policies, but is also able to articulate the *grounds* on which her view is based (turns 39 and 41), which is a telling feature of literate talk (Wallace, 2002). What is more, she flags the subjectivity of her opinions and moderates her stance with 'I think. . ..' in a number of places (turns 37 & 39). This relates to the notion of modality – which encompasses the signalling of both a speaker's stance to what he/she is saying and his/her alignment to the hearer/s (Wallace, 2003). In this case, Mae is probably signalling a tentative stance and therefore opening a discursive space for her classmates to introduce alternative views. The stance expressed through 'I think' is therefore potentially as much a sign of reflexivity and a quest for truth as an admission of uncertainty or lack of confidence in her views. This is significant because the discipline of Social Studies as well

as part of the learning outcomes of its syllabus necessarily call for a recognition of and ability to articulate the inherently subjective, opinionated and even biased nature of its subject matter, as students are made to navigate its sensitive and often ideologically colored, socio-political terrain. As Wallace (2003, p. 87, citing Clegg, 1992) argues, 'talk for learning manifests an underlying stance of uncertainty or tentativeness'. Mae's awareness of this subjectivity and hence negotiability of views is again evident in a later lesson (Excerpt 4) in which she is able to qualify and moderate her viewpoint regarding Japan's situation.

Excerpt 4

1.	T	Ok, let's hear from.. Samuel. Give me a question. For them. For Japan. They have commented. They say that Japan is fiddling, playing around.. What do you think, Samuel? Post them a question. . . Come on! . . . Ok, you can continue to think. This group. . . . Think. Yes, Elvin? Give them a question. About Japan. You all listened to their presentation. Now, you ask a question. [Students discussing] . . . I'm waiting.
2.	S	Do you think it's the-
3.	T	Yes, they cannot hear you. Can you please, erm, stand and share with us?
4.	S	Do you think it's the government's fault that they have such a problem?
5.	T	Which problem now?
6.	S	The problem is that - [Pause]
7.	T	What's the problem?
8.	S	Ageing population in the //[xxx]//
9.	T	//Ok.// Do you think it's the government's fault that they have this problem? Anybody care to . . . explain. Yes, Mae? Ok, let's listen to Mae.
10.	Mae	I don't think it's the government's fault because Japan is an industrialized country. So, apparently the standard of living is also raised. And, it's very expensive for them to raise up child. So, probably this drives them to have. . . to delay their marriages and to have fewer child. And, the government being- I mean, the fact that the government, erm, make the country an industrialized one is because it's to drive their economy. And they don't have very fertile land, so they can depend only on this area.
11.	T	Ok.
12.	Mae	So, I don't think it's the government's fault. And, from these four articles that we read, erm, we never.. read anything about disincentives.
13.	T	You didn't read anything about disincentives?
14.	Mae	Yah, except for the one that they resist hiring foreigners.
15.	T	Ok, thank you very much. Elvin, when you asked them that question, what was behind your mind when you asked it?
16.	Elvin	I thought the government wasn't doing their job.
17.	T	Oh, you thought the government was ineffective.
18.	Elvin	Yah.
19.	T	Ok. Thank you very much.

Mae's adding of lexical content and use of modality in her reasoning – 'so *apparently* the standard of living is also raised' and 'so, *probably* this drives them to have. . . *to delay their marriages* and to have fewer child [sic]' (turn 10) – suggest her awareness of both the need for precision and for flagging the speculative nature, and hence negotiability, of what she is saying. Also notable in this excerpt is Mrs. C's persistence as she eggs her students on to direct critical questions at their classmates, which eventuates in one student's question (turn 4), which in turn precipitates Mae's extended, thoughtful response. This persistent spurring of students to ask one another critical questions that open up the space for critical analysis and evaluation of key issues represents a distinctive strategy on Mrs. C's part to engender substantive communication among her students. While Mae's own cognitive and linguistic abilities should certainly be acknowledged, the confidence, spontaneity as well as ability to moderate her views that she so ably demonstrates in these two excerpts must also be credited, at least in part, to Mrs. C's careful and deliberate micro-

scaffolding, which not only directed critical questions at individual students but also modeled this behavior to other students in the class and reminded them they would have to ask each other such critical questions subsequently. The expectation that what she says may be queried or even challenged by her classmates, as tended to happen during whole-class discussion stages, is likely to have contributed to Mae couching her responses in more tentative, modalized terms. This also dovetails with the notion of 'dialogue before an audience' which sees the dialogic talk that takes place in a classroom as a kind of performance, which entails students vying for the floor, being attentive to their audience (the rest of the class) as well as the immediate interlocutor (i.e. the teacher) and directing their speech in ways that are appropriate for both groups (Lefstein, 2006, p. 10). What Mrs. C does to produce or engender this high level of student uptake of learning and understanding is to create a rich, dialogic environment for her students to first observe and later practise and reinforce this skill of 'manipulation of knowledge' with one another.

2.2.1.3. Linguistically supporting literate talk. Clearly, not every student would be able to demonstrate the sort of uptake and confidence that Mae displays. In this regard, Mrs. C's finesse in patiently and persistently encouraging the less able and vocal students in her class to participate in substantive classroom talk is therefore significant in view of developing and supporting literate talk. Excerpts from another lesson illustrate her efforts, although we must also acknowledge their occasional inconsistency, brought about, no doubt, by the contingent and ad-hoc nature of the interactional work she has to do as she estimates, and responds to, the evolving sequence of talk and by her concern with achieving shared understanding of target academic concepts and ways of speaking and thinking.

Excerpt 5

1.	T	Examples, what else did the government do for both sides? Try to recall the information that we have looked at. Now we are looking at comparison, of course, it is slightly, it's a higher level.
2.	S	The family will ..
3.	T	Yes?
4.	S	The family will make, the family will provide financial support to the elderly.
5.	T	So, similar for both countries, will be the families now have a greater responsibility; they are to provide for the elderly, very good ok. So, similar trends? What is another possible one, possible answer? Yes, Ben?
6.	S	Taxpayers will be the source of income.
7.	T	Taxpayers will be the source of income. Ok, good. Can I have another one?
8.	S	So many.
9.	T	Let's have another person. Thanks Ben. Can I have somebody else? I like to hear from you all. Wun Kang, do you want to share with us?
10.	S	Life style.
11.	T	That's very little. I want you all to stretch a bit more. Henry? Nothing? Samuel? I am sure there is something else about life style?
12.	S	Healthy life style.
13.	T	Sorry. What about? Don't give me a one word answer
14.	SS	Promote activities.
15	T	Promote activities to encourage healthy life styles for the elderly I expect you to be writing in proper sentence. Now, I am telling you that if you continue to write in one word answer, two word answer, it is not going to benefit you. Stretch your answers, come on ok. Government promoting healthy life style. The elderly are encouraged to take action on their health ok, go for medical check, both countries emphasize community health, you have forgotten about that. So there are more than two points you can elaborate and stretch the points, both emphasize community health. Ok, let's move on. In the similarities there are also differences. How different are they?
16.	Lawrence	Opportunities for elderly to upgrade.
17.	T	Opportunities? Would you like to elaborate please? That's a good point.

In this lesson, Mrs. C is engaging her students in a discussion comparing the policies and measures adopted by Singapore and Japan to deal with an ageing population. As she gets the students to move from summarizing to the 'higher level' (turn 1) of adopting a critically comparative stance, Mrs. C also realizes that for some of them this may lie beyond what is unproblematic for them and that they may require support to communicate their meanings in more explicit, structured, context-reduced ways. For the less articulate among them who are initially prepared to offer only terse, one-word or one-phrase answers (turns 10 and 12), Mrs. C persists in encouraging them, through her questions and reformulations, to elaborate and 'stretch' their points (turns 11 and 15) for the benefit of their classmates, and thus to view themselves as valued contributors to the classroom conversation. The take-up by some students may not always immediate, but looking ahead to the written work the students eventually will have to carry out, Mrs. C decides to shift her discourse briefly from the broader ideational concerns to matters linguistic (turn 15), drawing the students' attention to ways in which they can articulate and structure the various points they have raised in subject-appropriate written language.

This encouragement provided by Mrs. C to gradually build up her students' confidence to facilitate elaborated literate talk appears to reap rewards as seen in one of the students (Ben), despite his lack of fluency, volunteering an alternative viewpoint:

Excerpt 6

18.	Ben	I want to offer an alternative answer.
19.	T	Ok, Ben, you have an alternative, share with us.
20.	Ben	For Singapore, right, eh the government, the government introduced the CPF, the compulsory, eh not the compulsory; it is a, ya, it's compulsory for all senior citizens living in Singapore, the elder, ElderShield //
21.	T	Mm, mm
22.	Ben	and for Japan they have a pension system, there is the, this money ah, that is contributed by the workforce in order to support the elderly.
23.	T	Ok, turn around and share with them. Ok, note this point, please, Ben has a good point, share please.
24.	Ben	Which one?
25.	T	The one that you've just shared with me.
26.	Ben	Oh, in Japan, there is a pension system that ah, is contributed by the work force to support the elderly.
27.	T	Pension system in Japan, if you pay attention, you will be with him. There's a pension system ok, but in Singapore?
28.	Ben	Oh, eh, in Singapore, all elderly have to take up a compulsory CPF savings account that is known as ElderShield, ElderShield. . . .
29.	T	Ok, clear, that will be under the government, alright, that is different. Ok, second differences will be. There is actually quite a lot to write honestly. I am just giving you a little bit of the backbone, because when you are doing your structured questions, when we look at some structured questions ah, you will have to elaborate and I will give you some structured questions as a sample and we can move on ok. Let's move on.

Mrs. C has just been discussing the idea that the Japanese government adopts a proactive approach to the issue of ageing population by raising the retirement age to 65 (compared to Singapore's, which is 62) so as to send a strong signal to the elderly about their employability. Ben's contribution is that while Japan adopts a pension scheme, Singapore has the ElderShield plan, which is a compulsory insurance plan introduced in 2002 to help Singapore citizens and permanent residents who reach the age of 40 cope with healthcare costs incurred as a result

of severe disabilities. From his repeated emphasis on the 'compulsory' nature of the ElderShield scheme (turns 20 and 28), it appears that Ben was trying to emphasize how this scheme is a government-directed initiative that forces people to save for their old age needs, whereas Japan's pension scheme is a more 'bottom-up' initiative in the sense that it is funded through taxpayers' money (turns 22 and 26). This could then mean that it is Singapore that is more 'proactive' in getting people to take active steps towards saving for their old age compared to Japan which relies on the contribution by the 'workforce' in general. Whether this is indeed the point Ben was trying to make and, more importantly, how this presents an 'alternative' viewpoint is an area that Mrs. C could well have delved into by getting Ben to explain himself more clearly, especially since she appears to have recognized the merit of his point (turn 23). Mrs. C could delay her feedback move at turn 29, which closes the exchange, and instead probe further with a follow-up or 'pivot' move (Gibbons, 2006) to link Ben's contribution about the pension versus ElderShield point with its significance to the issue at hand. Instead, what we see is Mrs. C being seemingly more concerned with classifying Ben's point 'under the government' initiatives rather than helping him to develop and clarify his idea, which is ironical in light of the reminder she gives her students that they 'will have to elaborate' (turn 29). In this instance, her attempts at developing her students' capacity for elaborated literate talk appear to be targeted more at procedural competence than cognitive or intellectual development, hence failing to exploit dialogue as a means of sharpening cognition and developing understanding and learning (Hicks, 1997; Nystrand, Gamoran, Kachur, & Prendergast, 1997; Wells, 1996).

Nevertheless, through Mrs. C's deliberate and sustained efforts in encouraging and facilitating her students' elaborated literate talk, they are beginning to show definite signs of warming up and becoming more spontaneous in their participation in the increasingly dialogic and substantive discussion. The gradually more elaborate student turns, as evident by the midway point of the lesson, also reflect the students' increasing interest in and engagement with the issues being discussed and their willingness, even eagerness, to participate in the discussion. The culmination of this unfolding lesson lies in a spontaneous and remarkably substantive response by one student (Jeremy):

Excerpt 7

30.	T	Yes Jeremy? Quickly, two more.
31.	Jeremy	Eh, actually for what I wrote is that the ageing population is a very difficult problem lah and this eh Singapore and Japan have done their part to try and solve the problem lah but in a different approaches lah. For Singapore I, I thought that the one that speaks most to me is the one about the CPF because the compulsory savings allows them to save money ah, that's why like some newspapers report says that Singapore has a very high rate of saving money lah, because certain percentage of your money you earned is put in CPF, but as for Japan they are relying on their pension lah and might not be very stable because already the population is ageing so eh taxes might have to be raised, like in Australia is what, about 48%.
32.	T	Ok, so this is a very. . .I think he gives a very sound conclusion. He deserves a round of applause for thinking about this point. (clapping) Ok, thank you.

Although Jeremy's presentation was based on notes he had assembled during the earlier groupwork, his willingness to volunteer his viewpoint and his ability to explain his line of thinking clearly and coherently are perhaps testimony to Mrs. C's sustained scaffolding and encouraging attitude, without which students like Mae, Ben and Jeremy, vocal though they may be, would probably not show the amount of interest and engagement with the class discussion as they evidently did.

What we see in these lesson snippets is not only evidence of substantive communication, but how this can be fostered by the teacher's provision of opportunities for her students to organize their thoughts in smaller groups prior to public speaking and the creation of an open and supportive environment as she gradually builds up her students' confidence to participate in the discussion. Despite their hesitations and sometimes less than fluent delivery, the students were able to articulate their knowledge and understanding of the issues involved to a certain extent. In a sense, we can see the lack of polish in their delivery as a reflection of the relative spontaneity of their classroom talk. Although the students would at times rely on notes they had jotted down earlier, as Jeremy did above (turn 31), they would *speak* rather than read from them, explaining and elaborating their points quite spontaneously, which stands in sharp contrast to the memorized, rehearsed regurgitations that teachers in Singapore routinely encounter during student presentations. What is also noteworthy is that the teacher chose to adopt a less intrusive stance, content as she was to reformulate, clarify, focus or encourage her students' talk to allow them to speak freely without interruption or inhibition, in order to engender a classroom climate where sustained and substantive communication can flourish.

Engaging students in ways that promote substantive communication and manipulation of knowledge enhances the overall intellectual quality of the lesson and therefore enriches the students' learning experience. It is one way Mrs. C encourages student talk that is planned, elaborated and explicit (in terms of the grounds on which it is based), thereby providing a useful bridge into expository written language.

2.2.1.4. Encouraging the taking of multiple perspectives. Mrs. C employs her repertoire of skills in structuring activities that promote the manipulation of knowledge with a clear sense of how her students' understanding of the topic is built up and hence can be increasingly drawn on and challenged as the unit progresses. Towards the end of the unit, she organizes a sequence of activities that allows them to examine the subject-matter at hand from multiple viewpoints. Here she adopts role-play as a strategy to get her students to construct and transform knowledge by making them assume various roles, like those of a young married couple, senior citizens, social workers and the government, in order for them to view the topic of an ageing population in its greater complexity.

Having just researched through groupwork the needs and interests of these stakeholders, the students are now invited to position themselves in the debate as representatives of these various groups of people and recommend proposals on their behalf. This process allows them to deepen their understanding of the many issues pertaining to, as well as ramifications arising from, policy decisions and hence the complexity of the role of the government in trying to arrive at a policy that takes into consideration the needs and demands of these various interest groups. What is especially noteworthy is the way Mrs. C is able to strike a balance between control and spontaneity, as she shuttles between opening the space for students to quite independently consider and challenge one another's viewpoints and suggestions and stepping in to regain the floor, as it were, for planned academic content to be learned.

Since this role-play constituted a high point of the unit and spanned an entire 1-h lesson in duration, let us examine a fairly long excerpt (Excerpt 8) to get a sense of the quality of the student exchanges as well as, crucially, Mrs. C's role in these exchanges.

Excerpt 8

1.	Nick	Ok, so erm.. as I was in the senior citizen's group, in a sense, I'm representing them. But we make decisions together lah. So- So, for the senior citizen's group, we- we came up with two- erm.. proposals in a sense. So- the first one is to relax the rules for the senior citizens, to allow them to work after retirement. The second one is to provide a new type of grant for care takers or senior citizens. Because, like sometimes, the senior citizens themselves, they- they do not know how to use the money as effective as, maybe the care taker. So, this money will help the care takers to- to be able to take care of the senior citizens. Yah, so erm. . . after discussing, we've decided that the new grant is more- is a more ideal- proposal [xxx] if it were to happen to Singapore. Because, retire- retirement age, some- not all the senior citizens will be able to work so much. We feel that if there is this new sort of grant for the care taker, then that means he will have the money to be able to support the senior citizens. And, maybe use the money more effectively than how the senior citizens themselves would use it. And, to- to make this effective, they will have to write like, erm.. an agreement with the government that they will use it for the right purposes for the senior citizen. [. . .]
2.	T	You all have heard Nick about this idea of coming up with the new grant. All right, do you have a question for Nick? [Pause] Ok, let's have the first group. Uh, Wai Min. Can you please raise a question for Nick?
3.	Wai Min	Erm, how much money would you think will be enough to be given to the care takers [2] each month?
4.	Nick	Erm... are [you XXX]?
5.	T	You- You have to give. Let's say, you represent the ministry.
6.	Nick	Erm..
7.	T	You would have thought through the issue.
8.	Nick	Maybe like, because it is a new grant. Maybe we will try. . . try out first arh. Let's say, give . . . about perhaps. . . three thousand a month.
9.	SS	Woah.. . . ..
10.	T	Three thousand monthly to take care of senior citizen. Ok, how many would want to take care of citizens if you get- get three thousand monthly. Me too. [Teacher and students laugh] I would. Ok, that's a great idea. So, what is your reaction when you all 'Woah'?
11.	S	It's a lot, a lot.
12.	T	It's a lot of money, right? Ok. Uh, Nick, uh, can you talk to your government department again? Er, we would love the three thousand Sing Dollars every month, ok? Can you please . . . think about that? You can see the reaction. Now he changes his mind uh.. So, ok, I think Wai Min, you have a very good question. How much? And he can't even decide how much, or the government. So you always know that . . . giving money as a base is not easy. Ok, how much will satisfy everybody? To some of us three thousand is a lot and to others it's very little. Because, if . . . your senior citizen has a very . . .lavish lifestyle, three thousand is not enough to take care of his needs. But if you really have a very prudent, basic- perhaps three thousand will give you a little bit more comfort. And if your senior citizen is very ill, three thousand a month is . . .no way to support the person. Let's say, going for dialysis, or for regular checkup, medication. It will not be sufficient. So, Wai Min, you've touched on a very good question. 'How much is enough?' Let's give this group a round of applause. [Class claps.]

By asking a representative from each of the 'interest groups' to take turns to present their recommendations and getting the rest of the class to comment by raising clarifying questions or constructive criticisms, Mrs. C manages to create an excellent platform for her students to engage

in meaningful discussion and debate. While she is no doubt in control of the knowledge associated with the overall development of the unit, the way she has set up the interaction structures creates opportunities for her students to engage one another in discussion and debate. The students are seen to be engaging directly with one another, rather than with or via the teacher, thereby locating the control with the students. When Nick, speaking on behalf of the senior citizens' group, offers two proposals – allowing senior citizens to continue working after retirement and introducing a special grant for the care-providers of elderly people – he is able to demonstrate critical reflexivity about his own proposals in order to self-select a 'more ideal' proposal. Moreover, he can articulate the reasons and considerations that underpin his group's decision-making process in a fairly cogent manner.

Also worth pointing out is that when Mrs. C elicits questions from the other groups in response to what they have just heard from Nick's group, the response is fairly immediate, compared to what we have seen earlier (in Excerpt 5) when Mrs. C had to coax questions out of her students. That one member of another group (Wai Min) is able to raise with minimal prodding the critical point about how much money would be enough (turn 3) is a testament to the success of Mrs. C's attempts to build up the students' critical disposition. Furthermore, in encouraging Nick to respond to Wai Min's question, she asks him to assume another role (of the government) in order to come up with a figure for the proposed grant (turns 5, 7 and 12). In so doing, Mrs. C is effectively helping the students to see the need to view an issue from multiple perspectives simultaneously. The tentativeness and uncertainty ('maybe', 'perhaps') with which Nick couches his response (turn 8) shows, as did Mae's in an earlier lesson, his possible awareness of the volatile ground on which he is treading and, in this sense, could reflect his understanding of the complexity of the issues involved in policy-making. Naturally, it would be difficult for us to ascertain if the tentativeness is a reflection of his awareness of the need to use appropriate metadiscursive markers to tone down the strength of his claims or simply his uncertainty about what he wants to say, although his use of 'try out first', followed by hypothetical 'Let's say' (turn 8), does suggest that he recognized the volatile ground on which he stood. Whether signalling metacognitive awareness or sheer insecurity, the fact remains that this overt display of tentativeness is preferable to a rigidly dogmatic or arrogantly uncompromising stance, inviting as it almost certainly does, challenges and alternative suggestions from his classmates, given the nature of the debate activity set up by Mrs. C.

While this deliberate and structured activity clearly succeeds in opening up the discursive space for students to engage directly with one another in a lively, spontaneous yet purposeful exchange, it is also significant to note Mrs. C's recognition of the need to balance this with opportune interventions to steer the discussion in the direction of her anticipated learning goals. Her protracted elaboration (in turns 10–12), for instance, could be seen as intrusive as it seems to wrest the control of the floor back from the students, thereby depriving Nick or his group of the opportunity to at least attempt to explain how he arrived at the figure of three thousand dollars for the grant and for Wai Min to explain why she asked the question and the issue she is trying to raising with it. It could be argued that if Mrs. C had allowed or merely facilitated her students' clarification/explanation of their positions on their own, it would have deepened the level and quality of their engagement. After all, true dialogic engagement entails not only a back-and-forth exchange of views, but also a willingness or openness to return to and possibly revise one's original viewpoint, 'using the Other's perspective as leverage for self-understanding and, ultimately, a revision of my own horizon' (Lefstein, 2006, p. 4). While Mrs. C has rather effectively explained the value of Wai Min's question and exposed the contestability of Nick's group's recommendation and therefore the need to revise or at least think it through more carefully,

it would have been far better if this had come from the students themselves, even if it took a little longer for it to eventuate.

However, rather than viewing this move as inconsistent with the dialogic structure that Mrs. C has so deliberately set up and carefully sustained, we prefer to attribute its use to her awareness that role-play activities can, and do, easily spin out of control and degenerate into a farcical charade, in which students gain little more than a fun distraction from their daily classroom routines.

In the final analysis, for manipulation of knowledge as an index of intellectual quality to develop, students need to be positioned as *active constructors of knowledge* through, for instance, the opportunities and questions provided by the teacher to get them to process and reflect on information and ideas, rather than as passive receivers of knowledge pre-processed by the teacher. Evidence of this must therefore come largely from student-talk rather than teacher-talk. This is why when a teacher like Mrs. C manages to structure an activity that launches the students into a self-propelling trajectory of 'high quality oral work' (Alexander, 2004), there is not only manipulation of knowledge but also substantive communication. Thus, as they approach the end of the unit, Mrs. C has moved her students along the mode continuum, encouraging them to produce 'literate talk' that is no longer spontaneous or informal, but carefully planned, elaborated and explicit (in terms of the grounds on which it is based), and thus provides a useful bridge into expository written language. It is also talk in which participants 'engage critically but constructively with each other's ideas' as they endeavour to gain a 'foothold in new cognitive territory' (Wallace, 2002, p. 106, citing Clegg, 1992).

2.2.2. *Explicit instruction*

As we have mentioned in our introduction to the ETR framework, recent educational research has established that as much as a supportive classroom environment, one that fosters a friendly, nurturing atmosphere among students, contributes to the production of work of high intellectual quality, it is insufficient in isolation. Few students, especially those from non-mainstream and non-English speaking homes, are able to 'discover' or draw 'common-sense' conclusions about their learning by simply being offered challenging practices and activities in the classroom. In working with Mrs. C, we have come to realize that a major reason why she is more adept than many of the other teachers we have worked with at facilitating student learning is her ability to, in Bernsteinian terms, deliver a 'visible pedagogy', i.e. a pedagogy that makes transparent what goes into high quality work and provides the support for its achievement. Perhaps most crucial in supporting knowledge construction and literate talk is the explicit teaching of strategies for thinking through and executing activities and tasks set. This involves the teacher's overt teaching and elaboration of procedural and metacognitive strategies needed by students to work with texts, and to plan, organize and complete reading, oral presentation and writing tasks. Such strategies are consistently discussed and modeled, often with the assistance of students so that they can assess and reflect on their progress, on an individual level, as they move through the activity or task.

Much of Mrs. C's success in explicit instruction and modeling is seen in the moment-by-moment unfolding of the classroom talk and her ability to respond to (and re-direct) her students' own responses. In Excerpt 4, we see the careful and assiduous manner in which she stages the activity in an attempt to have her students grasp the often complex nature of national policies. While in an earlier lesson, she had successfully modeled for them what counts as authentic, effective probing into their foreign classmates' experiences (see Excerpts 1 and 2), the kind of questioning demanded here was cognitively more demanding, as it required the critical evaluation of each others' presentations. Mrs. C effectively guides her students to arrive at a level of understanding

not through direct telling but through a series of pointed queries. She was prepared for the fact that her students would have to be apprenticed into this unfamiliar, challenging role of posing critical questions. When the students lapse into predictable vagueness, she asks them to be more precise and specific (turns 5, 7, 13). A noteworthy part of this excerpt is when Mrs. C, rather than summarizing the points herself, gets her student Elvin to do so by explaining the rationale of the question he had posed earlier (turns 15–19).

In Excerpts 6 and 8, Mrs. C was able to make use of overt teaching (Excerpt 6 turn 29; Excerpt 8 turn 12), pointed questioning (Excerpt 6 turn 27; Excerpt 8 turns 2, 5, 7, 10) and revoicing of student responses (Excerpt 6 turn 29; Excerpt 8 turns 10, 12) to get the students to at least begin to understand the many competing demands governments have to consider when formulating responsible national policies, and that there is no universal way to deal with the issue of an aging population. Likewise, in re-visiting Excerpt 5 we can appreciate how she scaffolds temporary supports for the cognitive strategies required to carry out higher-order work with texts. She focuses this phase of her lesson not on telling the class *what* a good answer is, but on giving them explicit strategies for *how* they can go about arriving at one. Through constant and pointed questioning, she raises the students' awareness of the major skills required for answering a 'higher level' question that requires 'comparison' (turn 1), namely the ability to 'stretch' their 'one word' answers through elaboration and the provision of 'several points'. Mrs. C is able to convey this understanding through her questions and her deliberate attempt to enable her students to meta-analyze their own responses.

The final stage of each activity cycle, referred to by Mrs. C as 'debriefing', is set aside specifically for consolidating, and reflecting upon the shared understandings gained in the prior activities and tasks. Mrs. C's emphasis here again is not as much on evaluating the outcomes themselves, but on commenting on the processes of reasoning through which they were arrived at, in line with the higher-order thinking practices enshrined in the Social Studies syllabus. At the same time, through these 'follow-up' comments on the various contributions made by the students in the preceding teacher-guided presentations and discussion, she also makes explicit for them the criteria for high quality work which they should produce in classroom talk and eventually in written language. To give a snippet from the debriefing at the end of the first activity cycle:

Excerpt 9

267.	T	Ok, this is to give you a debriefing of the discussion. First let's thank all those who have participated. [Students clap.] As for the comments, please don't take them too personal, take them as a learning point. Because I do see, for example, Mark - You repeated quite- quite a bit. And you beat around the bush. And that can easily happen in your essay too, ok? And there it will be more obvious, so you really have to watch out for this. Erm, for Stephen, he was well prepared, but I think at one point he felt he had to rebut, and at that point, I noticed that he was a bit unsure. So- probably your strategy should have been, stick to what you have prepared, and leave the rebuttal for later. Because that caught you off guard, and when you were off guard, you couldn't do a good presentation. So, you got to be very careful about it. Erm, Elson, to me, if he had organized his stuff better, he. . .could have done a very good presentation. Because he had all the evidence from newspapers, and he brought in what the senior minister, now mentor minister, has said.

So, he had his stuff. But it was unfortunate he didn't really quite organize it. Logical organization of points is especially important in your written work.
Ok, you also seemed anxious. Did you see? So that could have distracted you from doing a good job. But you're definitely capable of doing a good job. All right?
Now, one of the general things I noticed.
Most of you in your readings have a lot of examples, much more up-to-date than your textbook, which you did not use to showcase.
You were very focused on just one or two pieces of evidence, not the strongest ones, and you also were very unclear about who said what when you quoted.

The criteria she highlights above – adequate and current content, judicious selection of material from texts and its proper attribution, logical arrangement of one's points etc. – do not, of course, come as novel to her students, since Mrs. C's continual calls for reformulation and extension during the prior co-constructed oral texts of teacher-guided reporting and whole-class discussion have allowed for opportunities to rehearse these features in literate discourse.

That these criteria have indeed become regular reference points for the students can be seen at the close of subsequent activity cycles, where the students themselves are appointed to take on the evaluative work, becoming legitimate and effective contributors to the activity of assessing their classmates' presentations, a role which Mrs. C modeled for them earlier. Here is how the debriefing stage of the next activity cycle begins, in which the primary task was the debate around the question whether an ageing population is a burden or an asset:

Excerpt 10

1.	T	. . . All right, let's hear from our three judges and what they have to share with us.
2.	Daniel	From what we see right, as- erm, from the- those that feel that the old are an asset right, er, Melvin, he's not very clear with his points arh. He doesn't really weigh the balance- the asset. Also, he could be more objective. As in, erm, he's very selective with his points. Yah, then. . .[Long pause]
3.	T	Aaron, you seem to want to carry on?
4.	Aaron	Like the group who said that ageing population is.. an asset. . .like Mark, he didn't really say that it's an asset. He is just proposing it's not a burden. So he needs to push further, I think.
5.	T	Mmm hmm [Acknowledges]
6.	Aaron	And Stephen did mention some points in support of the asset. [xxx] it was not strong- they were not strongly supported.
7.	Mandy	Erm, I think the.. points given by the burden group, er, are more weighty. Because they focus on the economical- economic matters and the government's point of view. So that, erm, they can really convince others that all these, er.. factors caused by the ageing population, er, will.. not benefit the young. And, for the . . . asset group, erm, they're just focusing on one area, and even there, I'm not sure that their argument is very strong. They're trying to say that, er, the- the old people can be an asset only if they are grandparents. If- I mean most of them are able to take care of the young children so that- What if they are old, lonely women and old men? Then, can they still take care of other children? I mean, they still have to fend for themselves. And.. but, I think the summary part by Elson was very well done that he can summarize it very clearly. Er. . .

8.	Daniel	Yes, and we also felt that, er, Marshall kept repeating the point of what Jia Yi said arh that, er, the aged are a burden, because they cause the government to spend a lot of money.. on like health care services, which then . . . it might cause, er, higher taxes. And then, those people that are working [xxx], teenagers or youth that are working, right, they will have to pay higher taxes. But they keep repeating that point. So he might want to like . . . concentrate on other points arh, or come up with new points. There were several more raised in their articles.

As Wells (1996) has shown in a similar case, the final outcome of this follow-up evaluation, in our case an increment in the students' shared knowledge about complex thinking and ways of externalizing it, may be similar to the one arrived at through the teacher herself earlier, but, very significantly, the distribution of responsibility for achieving it has shifted from the teacher to the students. And because 'debriefers' change from one activity cycle to another, and have learned to focus their feedback not on the validity of their classmates' viewpoint but on their ways of thinking and talking about it, it is far less likely to be perceived as face-threatening by the students addressed than it would otherwise.

3. Conclusion

In sum, what we have witnessed through the analysis of the overall architecture of Mrs. C's unit and various snippets of her lessons is evidence of both manipulation of knowledge and substantive, literate talk, in the way she plans and orchestrates her classroom activities and provides discursive guidance to foster a linguistically and cognitively supportive environment in which the students are offered challenging epistemic roles and praised for their efforts to take them up. The relatively long student contributions, though not always skillfully articulated, reflect the students' understanding of the issues under discussion and, more significantly, their willingness to take risks and participate in the co-construction of knowledge and learning within the class. In a sense, the lack of polish in their delivery reflects the relative spontaneity of their classroom talk, antithetical to the memorized, rehearsed regurgitations that teachers often encounter during student presentations. At the same time, these lessons are also testimony to Mrs. C's willingness to deal with the element of uncertainty that is introduced into the teaching process when students are engaged in knowledge construction, and to act contingently, providing support at points of difficulty for her students, which are not always predictable (Lingard et al., 2003, p. 413).

It is no coincidence that the skills that Mrs. C was trying to cultivate through her micro-scaffolding throughout the classroom interactions relate closely to the type of evaluative skills specified in the Social Studies syllabus referred to at the beginning of this paper. As much as she is adept at engaging her students through the regular connections she makes between classroom learning and real world experience, thereby underscoring the value of the lessons *beyond* examinations, she is equally mindful of the sort of competencies and skills her students are expected to be equipped with and display *within* examinations according to the syllabus. Her attempts at striking a balance between the two are not always successful, as her concern to take the class to what she has set out as critical learning goals occasionally leads her to squelch seemingly off-task student contributions rather than probe further and seek to incorporate them into the cumulative building of new knowledge and understandings. Doing the latter, of course, often involves more elaborate exploration than a teacher thinks she can afford under the pressures of classroom life.

At the same time, though, in the light of classroom research that has consistently pointed to 'the relative rarity of productive classroom discussion' (O'Connor & Michaels, 1996, p. 97; also Haworth, 2001; Myhill, 2006, and Nystrand et al., 1997), even in secondary and university contexts, it is important to acknowledge Mrs. C's achievement in this realm. As her students moved through this unit, their learning about Singapore's population policies was not only broadened (by connecting experiences from other texts and people's lifeworlds with textbook knowledge) and deepened (by getting them to engage with, and evaluate the diverse, often conflicting viewpoints which these different sources of knowledge put forward), but also judiciously aligned with the syllabus requirements so that they would perform well in their year-end examinations.

To achieve these goals, the macro-scaffold at the unit level was vital, providing as it did a coherent framework within which Mrs. C carefully sequenced the various cycles of activity to support her students' gradual building of subject knowledge and language. It also shaped and connected the local scaffolding that we have shown and commented on through the various excerpts occurring at key points in the unit, as it focused Mrs. C's approach and interactions, allowing her to seize opportunities for teaching and learning, and to develop new, deeper understandings and meaningful, substantive communication among her students.

And that her students were fully aware of the qualitatively different 'zone for learning' (Cole, 1995) which Mrs. C's social studies classroom offered, is nowhere more obvious than in the focus interviews we conducted with them at the end of the unit. From their point of view, her class provides an environment where the development of thinking, participatory citizens, not the mere transmission of national education, is the ultimate goal. More specifically, when we asked the students whether and why they had enjoyed the unit, and what the most useful things were that they had learned, the following substantive conversation ensued:

16.	S1	Mrs. C makes us think and stretch our thoughts in . . . I mean not only the information we get from the textbooks. We think, we analyze and then find solutions in a practical way, especially when we do the case studies.
17.	I	You think that's useful?
18.	S1	Yah, and we really understand it. . . well. Not only memorizing all the facts.
19.	S2:	Yes, to be honest, in Mrs. C's class most of our time is spent on discussing and asking questions and thinking about the solutions. So it's quite effective.
20.	I	Ok. And were the lessons you had for this topic typical as compared to the lessons of earlier topics?
21	S3	Typical for Mrs. C. Not for most of the other teachers.
22	I	How would you know?
23	S4	I have friends. We've been talking and compare notes. Other teachers don't teach like her. As in like . . . they teach from the textbook and say what's important and what to take note of. But the textbook is limited information. It concentrates just on Singapore.
24	S3	And it has a one-sided view and it's just the same stuff.
25	I	I assume from all that that you generally enjoy your social studies lessons?
26	S1	Yes, as compared to other lessons.
27	I	Why?
28	S3	Maybe because it's in an airconditioned room. [Ss laugh.] No, what I want to say is that she always gives us challenging things to do and we are never left [xxx].
29	S2	It helps build our analys. . .analytical skills or whatever. Yah, I mean you stretch and think more. Like in the role play, even if you're not a senior citizen or a married couple, you can erm put yourself into their shoes. Like I'm a student, not senior citizen, but now I can think more deeply about it and see the situation from their point of view.

Appendix A. Expanding Textual Repertoires: Professional Development Sessions 2004/2005

Session 3 - Reviewing our unit through the three-dimensional framework for effective pedagogy

Connected learning	Were there connections made, in activities, texts and tasks used, to relevant background knowledge and experience (everyday/home and academic) of your students? How and where? Could this have been done more often and/or more effectively? Did the activities, texts, skills and tasks you assigned have clear value/utility for your students outside your classroom? How and where? Could this have been done more effectively? Overall, how well did the individual activities and tasks, talk and reading and writing materials used in the unit hang together? Was this interconnectedness made apparent to your students? Which activities/texts/tasks did not quite fit in/interrupted the overall coherence?
Intellectual quality	What were the key concepts/skills taught in the unit? How thoroughly were they explored? Were your students able to gain an in-depth understanding? How did you achieve this? How did you assess this? Were your students engaged in work that required them to analyze, synthesize, generalize, evaluate, draw conclusions from texts and knowledge? What classroom activities and tasks were assigned that invited sustained, extended communication between you and your students, and between students? What were they, and how well did they work? Did you provide opportunities for your students to question texts, ideas and knowledge, and to explore different perspectives on knowledge/issues? Could there have been more such occasions?
Explicit instruction	What were the key tasks in the unit? Were your students given clear criteria for the quality of work (oral and written) they produce, and were these criteria introduced prior to the task execution and frequently referred to? Were your students taught strategies for doing these tasks (e.g. how to plan and organize their presentation/writing, imagine an audience, select relevant information etc.) prior to doing them? In what ways were the tasks set more challenging than ones your students have done in earlier units? Did you give support in those areas/aspects that were new/more difficult?

After answering the above questions, can you suggest three areas where you think the unit might be rendered more effective?

1.

2.

3.

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