KNOWLEDGE MOBILIZATION, MULTILINGUAL STUDENTS AND

DEMOCRATIC ACCOUNTABILITY

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ABSTRACT

Information societies, characterized by mobile populations, cross-border collaborations, and an emphasis on knowledge creation, increasingly value individuals' ability to move knowledge across contexts. Yet, despite the privilege conferred on such practices, knowledge mobilization as semiotic practices remains relatively unexamined, its theorization lagging behind scholarly and public interest.

This inquiry takes up the challenges of theorizing knowledge mobilization, testing the explanatory potential of Bernstein's sociology of pedagogy and the pedagogic device as it relates to knowledge movement in and about classrooms (Bernstein 1977a, 1990, 2000, 2001). Its specific interest lies in: a) the potential contribution of students' quotidian (particularly multilingual) knowledge to students' apprenticeship in knowledge mobilization skills, and b) the circulation of knowledge regarding such practices among educational stakeholders. Theorizing knowledge mobilization as a practice of recontextualization, and capitalizing on well-established exotropic relations between Bernstein's work and social semiotics, particularly systemic functional linguistics (SFL) and development of a visual grammar (Halliday, 1978, 2004; Hasan, 1999a; Kress, 2000c; Kress & van Leeuwen, 1996/2006), three propositions focused on multimodality, student voice and register are used to test Bernstein's theories against students' and teachers' hypermodal texts (see http://multiliteracies.ca).

The analysis reveals the complexity of the recontextualization tasks and the pertinence of Bernstein's theories. Affordance of a range of semiotic resources facilitates recontextualization of quotidian knowledge within an academic register; enables drawing on multilingual capabilities to support a position as knower among parents and peers; and allows a student's substantial design skills to be employed in the interpretation of a Shakespearean sonnet. But multimodality confounds as well as supports recontextualization of pedagogic texts and practices for purposes of public accountability: the dissolution of the textual boundaries integral to hypermodal texts simultaneously dissipates the teacher's presence as author and knower. Here, Bernstein's theories explain how stakeholders' position as co-author of hypermodal texts combines with the texts' predominant register to impede mobilization of teachers' knowledge. The relevance of

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Bernstein's theories to explanations of reversals of dominant knowledge flows and to pedagogic practices of knowledge mobilization are highlighted.

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For my parents, who taught that freedom is accompanied by obligation and responsibility, and that one's obligations are to more than self-interest.

And because a thesis about meaning must have space for a piece of chocolate cake clearing airport security, a coffee offered in a hayfield, and a handkerchief shared in a garden.

INTRODUCTION

This is a thesis about knowledge mobilization. First and foremost, it is a thesis focused on the human diversity of contemporary Canadian classrooms; the possibilities afforded by the multilingual, multiethnic, and multicultural differences which characterize these formal learning environments; and the educational needs of students who are the source of difference. However, it is also concerned with institutional and organizational efforts to support students' development as meaning-makers; the practices employed by educational systems to provide accounts of such efforts; and the sometimes inadvertent impediments to learning that well-intentioned "accounting" practices create for students and teachers. Thus, it is a thesis which poses questions regarding knowledge in the classroom and knowledge about the classroom, viewing both through the lens of knowledge mobilization.

It is a thesis about knowledge mobilization because knowledge mobilization is a highly valued social practice, and, within the limited capacity of humans to forecast the future, it gives all appearance of remaining such over the next several decades. Within the participative networks of current communication structures, the transnational organizations of global corporations and NGOs, and the local community associations seeking to capitalize upon and mitigate against the impact of larger social forces, it is not only what one knows, but also what one can do with it. Knowing has power only to the extent that one can contribute to the meanings others make of the world.

Yet, addressing knowledge mobilization in relation to Canadian classrooms presents a theoretical dilemma. At its most simple, knowledge mobilization is transferring knowledge from one context to another. The Social Sciences and Humanities Research Council of Canada defines knowledge mobilization as "moving knowledge into active service for the broadest possible good." Arguably, by either definition, schools are one of the primary agents of knowledge mobilization within a society, their purpose (variously disputed) the sharing of a society's knowledge and of its socially sanctioned ways of being in the world. However, student apprenticeship in knowledge mobilization adds an additional layer of complexity to education's processes, for such apprenticeship requires students to act as the agent, actively assessing the knowledge they might offer, and consciously considering how it might be positioned to contribute to others' acts of

meaning-making. The individual who displays a mastery of knowledge mobilization practices must simultaneously attend to the context in which the knowledge was produced and the context in which it will be shared, purposefully and deliberately adjusting the semiotic representation of their ideas to reflect the needs of the new context. Thus, knowledge mobilization requires attention to difference and similarity, to the privileging of forms and content of knowing, and to shared needs as well as personal objectives. While the practices are not distinct from the core purpose of school, they shift relations among participants in ways not easily accounted for by current theories of pedagogy.

Within the context of the two research grants from which this work arises (see below), knowledge mobilization began as a subsidiary issue, a practice in which researchers were required to participate but not the central point of examination. Elaboration of theory was a minor objective, the research questions quite clearly empirical. However, as the successes and failures of the pedagogies and research activities became apparent, knowledge mobilization emerged as a unifying theme. Multiliterate pedagogies drew upon students' quotidian knowledge in ways that the research's theoretical frame could not account; the formal communication channels between teachers, schools and their communities offered no mechanisms for sharing information about the rich meaning-making practices in which students were engaged. Without theory to adequately account for knowledge mobilization, it became impossible to link together the demands, challenges, successes and failures that the data represented. And so, because this is where the need was greatest, the thesis has evolved into a search for theories that make possible an account of knowledge mobilization within highly diverse classrooms, and within the diverse communities in which Canadian schools are situated.

A Consideration of Context

Assumptions of the Social Context

There is much that is assumed in focusing on knowledge mobilization, assumptions which must be made transparent before proceeding. First, there is the

assumption that knowledge mobilization generates public and private goods, that it yields potential benefits to individuals, organizations, and societies. Contemporary economies have been characterized as knowledge and/or information based for more than forty years, the term knowledge worker having been coined in the early 1960s (Bell, 1973; Drucker, 1969, 1978, 1993, 1994; Lipset, 1979; Machup; 1962; Porat, 1978; Tsay, 1995). Globalization is, again, a decades old concept, and global knowledge flows are experienced as a lived reality, perceived as altering the ability of nation-states to independently chart social, cultural, economic, and environmental policies (Carnoy, Castells, Cohen & Cardoso, 1993; Castells,1996; Freidmann, 2005; Levitt, 1983; Porter, 1990, 1998; Sassen, 2007). Hypotheses regarding the necessity of flattened, networked organizational structures, lateral information flows, matrixed decision-making, and practice-as-design have entered mainstream and critical discourse as transportation, communication, and information technologies have altered the movement of people and ideas (see writers as diverse as Brown & Duguid, 2000; Coyne, 2005; Hinds & Kiesler, 2002; Lovink, 2002; Mintzberg, 1998; Rossiter, 2006; Stein, Stren, Fitzgibbon &MacLean, 2001; Sunstein, 2006; Surowiecki, 2004). Open source and open knowledge movements argue for the public's right to collectively generate and access knowledge and knowledge systems, frequently asserting that such rights are integral to functioning public institutions in open societies (see for example Barney, 2000; Braman, 2006; Borgman, 2000, 2007; Delbert, Palfrey, Rohozinski & Zittrain, 2008; Electronic Frontier Foundation; Lessig, 2001, 2004; Open Society Institute, 2008; Shaver, 2008). Though the distribution of benefits derived from knowledge mobilization is contested, this thesis accepts that the ability to move ideas across contexts affords individuals increased agency in their personal and public lives.

A second assumption relates to diversity's role in generating benefits from knowledge mobilization. A burgeoning literature on creativity, within which diversity and difference are theorized as critical elements, has developed alongside the interdisciplinary field of knowledge management (Bowen, Bok & Burkhart, 1999; Florida, 2002, 2003; Lau & Murnighan, 1998; McLeod, Lobel & Cox, Jr., 1996; Page, 2007; Polzer, Milton & Swann, Jr., 2002; Richard, 2000; von Hippel, 2005; Williams & Baláž, 2008). Perhaps such literature has simply made a virtue of necessity, for research

on knowledge and diversity is predominantly conducted in developed nations, those which have substantially altered immigration and migrant worker policies in the face of declining birth rates. Regardless, researchers are attracted by the implications for citizens and organizations of a broadening and deepening national diversity, an internal diversity accompanied by increasingly rapid and frequent transnational interactions. In the context of this literature, diversity is frequently posited as an asset, and will be assumed as such in this thesis.

It should be noted, however, that an argument for diversity's value is not an argument for tolerance, recognition, or celebration[1], although tolerance and recognition have their own rightful place in social and educational policy and theory. Nor does the thesis attempt to define the lines and boundaries of diversity, although human rights legislation, corporate and institutional policies, government grants and programs, and marketing strategies categorize and classify difference to suit their particular idiosyncratic needs. The more hard-hearted basis for research into diversity's impact on creativity is the presumed correlation between creativity, diversity, and individual and organizational performance. Few studies have been able to meaningfully quantify the relationship[2]; however, in theorizing knowledge mobilization in education, the underlying assumption is consistent with this utilitarian orientation, that a learner's ability to mobilize his/her diverse knowledge assets contributes to their own and others creative potential and academic success.

The third unchallenged assumption which underpins this thesis is that open democracies are obliged to ensure a relatively free flow of information between their institutions and their publics. As transnational interactions have impinged on nation-states' ability to exercise independent control over their social and economic domains, theorists in public policy and political theory have fretted over the challenges posed by increasingly indirect connections between individuals and those who make decisions in

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[1] The celebration and/or valorizing of diversity presents its own challenges for students who speak English-as-an-Additional Language (EAL) (Leki, 2001; Leki & Carson, 1998); Benn Michael's (2006) cantankerous monograph on the effective use of diversity to obscure issues of class is a further example of concerns raised by social and/or political (mis)use of diversity.

[2] One notable exception is Ely and Thomas' work within a northeast American financial institution, in which the only branches adopting an integration and learning orientation perspective to diversity demonstrated correlations between diversity and sustained performance gains (Lagace, 2004).

their interest (Burdett & Sudjec, 2007; Rossiter, 2006; Dunn, 2005). The Anglo-Saxon preoccupation with accountability exists within a context of related concerns regarding the distance between governing bodies and their electors, the transparency of state institutions, and the sometimes opaque dealings of international regulatory bodies with little or no direct political accountability. Alternative models of participatory democracy, explorations of e-democracy and e-government, and reimagined policies for balancing public interest and privacy rights link to these larger concerns (Braman, 2006; Fountain, 2001; Jenkins & Thorburn, 2003; Mossberger, Tolbert & McNeal, 2008; OECD, 2008; Rogers, 2004; Schön, Sanyal & Mitchell, 1999). The obligation of educational systems to provide accounts of their performed social responsibilities is not contested in this thesis, though the quality of the information provided is a direct concern.

These three assumptions – that knowledge mobilization generates public and private goods; that diversity contributes to gains realized through knowledge mobilization; and that open democratic institutions have an obligation to ensure the free flow of information – serve to define the research context, the larger social environment in which students learn and schools function. However, the focus must sharpen on education before knowledge mobilization itself can be explored.

Changing Contexts of Meaning-making

Arguably, a thesis about knowledge mobilization in education requires a dual emphasis on knowledge in and knowledge about the classroom. Or perhaps it is better argued that the two cannot be separated at this moment in time (taking an extended view of a historical moment), for at this moment knowledge has become a primary indicator of a society's social and economic well-being, and measures, assessments, and certifications of knowledge have assumed a new salience in political decision-making. At an international level, the World Bank, the United Nations, and the Organization for Economic Cooperation and Development (OECD), among others, regularly compile statistics and comparisons of educational progress, the processes by which knowledge of education is generated also becoming a matter of study (see for example Canadian Council on Learning, 2007; European Union et al, 2007; Hanushek & Wößmann, 2007; Maclay, Hawkins, R. & Kirkman, 2005; OECD, 2003, 2006c, 2007a, 2007b). Nationally,

the Council of Ministers of Education (CMEC) has replaced the School Achievement Indicators Program (SAIP) with the Pan-Canadian Assessment Program (PCAP), a national assessment of student performance in science, math and reading, partly in response to international assessments (CMEC 2007, 2008a, 2008b; Statistics Canada, 2008c). Knowledge about the classroom, increasingly systemized and formalized, is the public face of knowledge in the classroom, and the visible and invisible pressures to align the two warrants and requires examination of knowledge mobilization at both levels.

Demographics of Context

The increased emphasis on knowledge comes as teachers and school systems adjust to new forms of classroom diversity, expanded notions of meaning-making, and increasing social and economic risks for students who fail to obtain socially-sanctioned credentials of knowing (OECD, 2005; Statistics Canada, 2006a, 2006b, 2007a, 2007b). Census figures demonstrate continuing shifts in Canada's demographics, with visible minorities consistently representing a growing share of the population, and changes in countries of origin reflecting new foreign economic, political and social realities (Research and Evaluation Branch, CIC, 2006; Statistics Canada, 2008a, 2008c). Diversity may contribute to creativity and national well-being, but it is not without its challenges. Mainland Chinese, an immigrant population that has fared relatively well in Canadian schools, are no longer the largest visible majority, and immigration from China is projected to drop in the next decade (Statistics Canada, 2008c). Immigrant groups whose populations have traditionally fared less well in Canadian schools are an increasing percentage of the national student body (see Garnett & Ungerleider, 2008; Gunderson, 2007; Toohey& Derwing, 2006). Regions that in recent decades attracted small numbers of immigrants are seeing new growth, as Canada's internal economic relations adjust to changes in world markets (Research and Evaluation Branch, CIC, 2006; Statistics Canada, 2008b, 2008c). There is hope that aboriginal education will finally receive the attention it deserves, requiring greater attention to aboriginal languages, Englishes, and ways of knowing. Urbanization, an international trend, creates its own sets of possibilities and challenges, as new populations abut against old, crossing and contributing their particular patterns of interaction to social discourse (Murdie, 2008). The children in

Canadian public schools, and the adults in resettlement, language, recertification, and continuing education programs are Canadian in their difference, but never easy to manage or support. Others may talk about difference, may choose to hire, manage or study it, but teachers and schools have no option but to address the needs that difference creates. Explorations of knowledge mobilization in and about Canadian classrooms must acknowledge their diversity.

Literacies of Context

Yet for all the changes wrought by shifts in the Canadian population, they are but one set of forces acting on Canadian classrooms. Literacy and what it means to be literate have always been socially contested (UNESCO, 2005), but the increasing prominence assigned to literacy measures has sharpened the debate (for examples of diverse perspectives on literacy see Brandt & Clinton, 2002; Cope & Kalantzis, 2000; Daley, 2003; Kress, 1996, 2000a, 2000b; New London Group, 1996, 2000; Street, 2003; UNESCO, 2005). Divergences in conceptions of literacies are further complicated by multiplying forms of knowledge representation, including the reweighting of modalities in professional and personal communication, and the continuing semiotic experimentation with digital technologies' affordances (Jewitt, 2008; Kress, 2000c, 2003b, 2005; Snyder, 2001; Unsworth 2001, 2006). The central issue, meaning-making, is sometimes lost amid multiplying definitions[3], the relations between academic literacies, the literacy practices of home and community, and the indicators of achievement variously disconnected from the classifications and categories asserted by one or another stakeholder. Though not addressing the debate directly, one cannot write

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3 Consider the definition of media literacy offered by Britain's Office of Communications (n.d.) - "the ability to access, understand and create communications in a variety of contexts" - alongside the definition of literacy in British Columbia's recently amended "School Act" (2006) – "'literacy' means the ability to understand and employ printed information in daily activities, at home, at work and in the community", and the understanding of literacy which underpins the United Nations' Literacy Decade (2003) -"Literacy is about more than reading and writing - it is about how we communicate in society. It is about social practices and relationships, about knowledge, language and culture. Literacy - the use of written communication - finds its place in our lives alongside other ways of communicating. Indeed, literacy itself takes many forms: on paper, on the computer screen, on TV, on posters and signs. Those who use literacy take it for granted - but those who cannot use it are excluded from much communication in today's world. Indeed, it is the excluded who can best appreciate the notion of 'literacy as freedom."

of Canadian classrooms without acknowledging the pressures placed on teachers and school systems by the continuing, contentious fragmentation of literacy/ies.

The implicit and/or explicit theorizations of context in such debates, however, is of central relevance to discussions of knowledge mobilization. At the polar extremes (admittedly caricatures of subtler arguments), context is either nothing or everything, largely irrelevant to the development and assessment of a set of decontextualized skills, or so entwined with meaning's practices that place and practice are inextricable. At their most extreme, neither theories of decontextualized nor socially situated literacies are adequate for theorizing knowledge mobilization, for knowledge and practice are made portable or different, but rarely both. Of course, the arguments are rarely so over-simplified, but the exaggeration draws attention to the frequent ambiguity of context in discussions of literacies and meaning-making, and the need for closer attention to its theoretical construction. Knowledge mobilization and the metaphorical existence of knowledge flows requires a theoretical "from" and "to," and the very premises of knowledge mobilization - that contextualized practices of knowing can be examined distinct from "data" or information (Davenport & Prusak, 1998), and that the movement of practice or information across contexts can stimulate innovation or improvement (Czarniawska & Sevón 2005; Kahin & Foray, 2006) – are made theoretically improbable without distinctive and traversable contexts. Thus, context is central to any theorizing of knowledge mobilization, just as it is to theories of literacies.

Languages of Context

Leroy Little Bear wrote of his first meeting with David Bohm, the quantum physicist, "…I (Little Bear) distinctly remember getting into a deep dialogue with him (Bohm) about language and how a particular language leads the speaker down a particular thinking pathway" and later of the openness of Bohm and Blackfoot culture "…to the 'new', to 'difference', and to 'possibilities' arising out of boundary crossings into different disciplines, cultures and ways of knowing" (2004, p. viii). In Little Bear's description, one sees exemplified the knowledge mobilization practices in which we might apprentice students, practices which complement rather than erase the boundaries of disciplines, social structures, and cultural categories. A scholar, a citizen of the Kainai

First Nation and winner of the Canadian Aboriginal Achievement Award, speaks with a theoretical physicist who worked on the Manhattan Project, and finds commonalities and new possibilities. The matters of exchange include knowledge of language, knowledge within language, and knowledge from the intellectual contexts in which the two men have worked. Their capacity to draw upon and mobilize their diverse understandings of the world yields new insights for both. They are meaning-makers in the fullest sense, literate beyond the classifications often narrowly deployed.

The multilingual capacities students bring to the classroom, the diverse ways of knowing revealed when working within and across languages, and the experiences of time and place which have characterized students' lives are 'data' and 'practice', available for apprenticing students in practices of knowledge mobilization similar to those displayed by Little Bear and Bohm. It is these capacities, abilities, and practices, highly valued in contemporary societies, which are a concern of this thesis. These possibilities are in some ways distinct from bilingual and multilingual education, the policies, pedagogies and research of which have a particular understanding of language learning at their core (see for example Au, 2006; Garcia, Skutnabb-Kangas & Torres-Guzmán, 2006; Hornberger, 2003; Hornberger & Johnson, 2007; UNESCO, 2003). Perhaps they are better framed as multilingualism in education, rather than multilingual education, for in urban school districts routinely supporting the education of students from more than one hundred (100) language groups, bilingual/multilingual education as it is traditionally framed is not a pragmatic possibility for any but the dominant language groups. But language – home language, first language, additional language, school language – is implicated in all aspects of knowing, the possibilities of extended sets of semiotic resources enabling meanings not otherwise available. Languages, not only language, need to be considered in relation to knowledge mobilization because of what they afford all classrooms, not only those designated for the purpose of learning language.

Accountabilities of Context

The demographics, literacies, and languages of the Canadian educational context return the discussion to knowledge of and knowledge in the classroom, and the extent to

which the information generated by accountability systems reflects classroom meaning-making practices. If, as presumed, knowledge mobilization is a highly valued literacies skill, then the classroom apprenticeship of students in such skills should be reflected in the knowledge circulated by accountability systems. If the quotidian knowledge students bring to the classroom, including the semiotic resources of and in language, have value outside the context in which they originate, then accountability systems should inform the public as to how such knowledge is put into active service for the broadest public good.

It is this democratic accountability that concerns this inquiry, the need to afford citizens the information required for the performance of their public responsibilities. Sassen asserts that researchers sometimes fail to acknowledge the complex, multiscalar relations of global and local actors, the dynamics of their mutually constitutive but non-exhaustive constructions, and their similarly complex relations with the nation-state (2007). Certainly Canadian education is emblematic of such relations, global competitive pressures leading provinces to align PCAP and international standards, national calculations enabled by the participation of the national statistics agency, international comparisons possible only because provinces, agencies, school boards, and parents agree to participate. Recognizing the multiscalar character of the local and the global, Sassen foregrounds the need for "…forms of state participation aimed at recognizing the legitimacy of claims for greater social justice and democratic accountability in the global economy, although both would require administrative and legal innovations" (p. 80). The alternative accountability practiced by the Vancouver School Board and their participating teachers is an experiment in such innovation, a small step in exploring how knowledge might be mobilized for the social good. Their risk-taking enables exploration of knowledge mobilization in the social sphere.

A Beginning Reflection

A thesis centered on knowledge mobilization is a thesis about possibility, an almost uniquely Canadian opportunity that requires seeing the glass (at least) half-full if it is to be seized. The need to adapt to rapid flows of people and ideas across and within continents has led to increasing recognition of the significance of Canada's relative success with diversity. While such recognition also brings the nation's failures into

clearer relief – the challenges faced by educated immigrants in finding employment that capitalizes on their experience and education; the variance between the educational attainment, health, and quality of life of Canada's aboriginal people and the general population; regional disparities in educational opportunities and outcomes; and the uneven success of immigrant populations in Canadian schools – it is important to acknowledge where our educational systems succeed (Dunleavy, 2007). Data drawn from the most recent TIMMS suggests that in this large-scale assessment, within school variability in student outcomes was greater than between school variability – in other words, that the school a child attended was largely unrelated to their performance (OECD, 2006c). Coupled with the consistently high performance of Canadian students on international assessments, particularly in BC, this is a phenomenal success, one the OECD has highlighted (Department of Education, 2007a, 2007b, 2007c, 2008; OECD, 2006c) [4]. We must do better in supporting those who have not yet shared in Canada's educational successes, but we must also go beyond the performance floor of basic measures that these assessments represent. Given the premium assigned to those skilled in multiple forms of knowledge representation, who are adept at engaging with diversity, and who are able to mobilize knowledge across contexts, these capabilities must also enter into our understanding of educational success, and into our circulation of knowledge about educational performance.

Thus, the challenges for Canadian schools are its opportunities – to provide international leadership in developing theories and pedagogy that broaden and deepen students' capacity as meaning-makers; to apprentice students in drawing upon their own and others' diverse ways of knowing not to become the other, but to collaborate in the creation of something more; to see more clearly the failures in our efforts so as to better imagine the possibilities that our diversity offers. It is this problem with which this inquiry engages, a problem seeking not to be solved, but to be continually explored.

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4 No assessment is uncontested. Sampling methods, assessment instruments, data collection, and statistical methods are all open to challenge. Still, given the consistent performance of Canadian schools in international studies, teachers, school districts, and provincial education administrators deserve recognition for the support they provide Canadian children in their educational development, as do the families and communities which support the students in a myriad of other ways.

The genesis of the thesis, then, is in this particular moment in Canadian education. But it is also rooted in meanings and understandings of meaning-making that have been added to and shaped by a lifetime of interactions with others of diverse perspectives and interests. It shares a concern for the ways in which lines are drawn and used within the context of Canadian society, a theme that runs through the reflections of many Canadians. Beverly McLaughlin, the current Chief Justice of the Canadian Supreme Court, has commented on her childhood literacies experiences in Pincher Creek, Alberta (less than 50 km from Little Bear and the Kainai First Nation), "with its Hutterite and Mennonite communities, a nearby Aboriginal reserve and a strong Catholic and Protestant presence" and remembered:

> *"...being confronted with human rights issues even when they weren't a big thing, back in the 1950s. I would think about actual issues of religious and racial intersection and how those were thought about in the community....Looking back, I think that was formative and an important influence." (Canadian Council of Learning, 2008)*

Thus, while thesis begins in this moment, the meanings through which it is construed extend much further back in time, meanings which emerged from the long, stark lines of possibility that are the wind-swept horizon of the southwest Saskatchewan bench.

Organization of the Thesis

As an inquiry into knowledge mobilization, the thesis' goal is the location of a theoretical framework capable of supporting examinations into the flow of knowledge across contexts; a framework capable of integrating examination of the semiotic demands of meaning-making with examination of the distributions of power which impact such flows; and which addresses the social and not the organizational. It argues the need for such theories in education, particularly as it relates to the schooling of multilingual, multiethnic students; presents associated issues; develops criteria for evaluating theorizations; and then tests Bernstein's sociology of pedagogy for its explanatory potential. The theoretical strands are diverse and the data analysis detailed; however, each

component of the argument draws to a single point – a theorizing of knowledge mobilization useful to education.

In developing such a frame, the thesis alternates its attention between the micro and the macro, moving from a child's text to the larger social context of schools' communication with educational stakeholders and back again. It draws on data gathered under the auspices of two major research grants, tracing the emergence of the thesis' central preoccupation – the need for a theorization of knowledge mobilization relevant to the demands of contemporary Canadian classrooms – before reviewing, selecting and testing existing theories of language and pedagogy appropriate to the task. The first project "From literacies to (multi)literacies" (hereafter referred to as "INE"), funded by the Social Sciences and Humanities Research Council of Canada (SSHRC) under its Initiative on the New Economy, was intended as a beginning for investigations of multiliterate pedagogies, pedagogies which draw on the expanded notions of literacies increasingly prevalent in theory, but less studied in praxis. The second SSHRC grant "Investigating alternative accountability", the primary source of data for this thesis, was designed as a continuation of the original grant, its orientation reflecting the issues raised by Vancouver teachers who were co-researchers and research subjects during the first round of activity.

A Word about Language

In traversing several theoretical fields and disciplines, it seems inevitable that language will be employed in this inquiry in ways alternately familiar and unfamiliar to the reader. For this reason, the phrase "quotidian knowledge" merits a moment's reflection, for those working within several traditions of language and literacies research may be more familiar with distinctions drawn between in- and out-of-school literacies practices, texts and knowledge. Among scholars who take Bernstein as a point of departure, home discourses are sometimes referred to as "local." However, within this inquiry, local is retained for discussion of teachers' recontextualization practices, and for contrasting communication associated with the local school, and that associated with the institutions of education.

The selection of quotidian is motivated, but the word holds no additional technical or theoretical meaning; its use is consistent with the Oxford English Dictionary's definition "Of everyday character; commonplace, mundane, ordinary." Hasan has used quotidian to distinguish between everyday and specialized discourses (see for example 2002a, p.124), and this inquiry adopts her language in an attempt to avoid the sometimes less precise distinction offered by home and school, for home discourse can and does approximate specialized discourses for some children, and it is the ordinary that is of interest here. The ordinary is no less powerful for being ordinary, strong evidence in the research of young children showing how differences in the ordinary "…established different ways of learning, different ways of solving problems, different forms of mental disposition" (ibid, p. 120). Quotidian, then, is used to capture everyday knowledge, including knowledge of languages and knowledge in languages, knowledge that rarely provokes pause for reflection or opportunity for deliberation.

It is also worth a moment to consider the inquiry's use of "knowledge mobilization," a concept which enters the inquiry in the opening sentence, and which is elaborated upon in conjunction with the discussion of Bernstein's theories. Across disciplines and fields, a variety of collocations are used in an attempt to describe and explain the movement of knowledge across contexts. Knowledge management may be the most familiar term, the field having over twenty years of research and publication history. But knowledge management takes a predominantly organizational perspective, with limited attempts to take up the complexities of knowledge flows within the larger social sphere. Within the diverse disciplinary and interdisciplinary scholarship related to mobile populations, multilingualism, globalization and information societies, no language has clearly emerged for addressing shared interests in knowledge flows. Knowledge mobilization's definition is explicit in its orientation to the social sphere, and while it is not a perfect term, it speaks to interdisciplinary interests as well as this inquiry's specific interest in multilingual students.

Chapter Summaries

Chapter 1 has set out the salient factors of the larger social context as they relate to knowledge mobilization, making explicit the societal assumptions which remain unchallenged in this work. In narrowing the focus to education, it has touched upon the forces acting upon Canadian classrooms - the challenges presented by increasing diversity, expanded notions of literacy, and the use of educational indicators as a measure of societies' economic and social well-being. It argues, as has Levin (2006), that these pressures exist within a moment of possibility, particularly as it relates to the value of students' multilingualism and diverse ways of knowing in education.

Chapter 2 moves backwards in time to the INE, presenting selected vignettes of students engaged in or reflecting upon academic activities in which they drew upon their quotidian knowledge. Woven with these vignettes are teachers' observations regarding assessment practices, formal accountability frameworks, and their relation to multimodal, multiliterate pedagogies. The two sets of practices – the students' use of quotidian knowledge and systemic practices of accountability – illustrate the practical challenges and possibilities of knowledge mobilization in education, and the need for a theoretical framework which can support their investigation.

Chapter 3 continues the development of the thesis' rationale, arguing the value of theoretical investigations to practical education problems. Informed by similar discussions in the social sciences, it maintains its connections to applied linguistics and the debates centered on Watson and Firth's 1997 challenge to then-dominant frameworks within the field. Agreeing that theoretical diversity contributes to a field's richness, it nonetheless suggests that within applied linguistics, and therefore language education, theories that do not explicitly incorporate a theory of language in their larger concerns add unnecessary confusion to the continuing conversations, and potentially limit the pedagogical application of their contribution.

Chapter 4 presents the first theoretical leg of the exploration of knowledge mobilization. It examines the contested notions of accountability that have taken root in Anglo-Saxon cultures over the last several decades, and the unresolved questions regarding the movement of knowledge between the public and its institutions. Using the

well-researched American educational context as a foil, the chapter demonstrates the limits of performance-based accountability models and of reliance on narrow bands of indicators in contributing to informed public decision-making. The way is opened for transforming issues of educational accountability to issues of knowledge mobilization, and the flow of information among educational stakeholders.

Chapter 5 shifts the discussion from knowledge mobilization to knowledge, and the increasing multimodality of its realization. It examines research of multimodality in education by those who adopt a social semiotic framework, and considers the extent to which such research implicitly and/or explicitly theorizes modes as culturally-embedded meaning systems. The limits and possibilities of current research in relation to issues of knowledge mobilization in education are considered, particularly mobilization of students' quotidian knowledge and of pedagogies which apprentice students in such practices.

Chapter 6 introduces Bernstein's sociology of pedagogy and the pedagogic device as a possible framework for theorizing knowledge mobilization in education - the mobilization of students' quotidian knowledge and the mobilization of teachers' knowledge of pedagogic literacies practices. It sets out criteria by which to evaluate theories of knowledge mobilization in education and then assesses Bernstein's pedagogic device against the criteria, establishing the relevance of the device and its recontextualising principle. In general terms, it then considers how the device might be extended and/or modified to enhance its explanatory potential in relation to knowledge mobilization.

Chapter 7 sets out the propositions against which the theorizing may be tested using empirical data gathered under the auspices of the second SSHRC grant "Alternative accountability." Each proposition is justified for its relevance to the theorizing, and its potential to generate new understandings and/or lead to improvements of the theoretical tool. A description of the testing process is provided, including: a) a description of the grant's research design; b) the criteria used to select thesis data from the larger data set; and c) a description of the approach to data analysis.

Chapter 8 assesses Propositions 1 and 2 against three texts in which students have successfully recontextualized quotidian knowledge for academic purposes. Each student

represents one of the focal classrooms in the empirical study "Alternative Accountability," and their texts draw on a complex array of multilingual, multimodal and digital resources. After establishing key dimensions of the voice of student-in-the-classroom, the texts are analyzed for the relation between the affordance of a range of semiotic resources and the approximation of voice to the texts' success. In addition to assessing the capacity of the pedagogic device to explain the texts' successes, implications related to expanded agency and creativity are discussed.

Chapter 9 assesses Propositions 1 and 3 against on-line, multimodal accounts authored by the three focal subject-teachers who participated in the empirical research. These accounts, authored as an alternative form of public accountability, extensively recontextualize pedagogic practice and texts and include the student texts analyzed in Chapter 8. To begin, data drawn from the group interviews is used to establish the relative success of the teachers' accounts. Subsequent analysis of the relation between the texts' viability to issues of register and hypermodality again demonstrates the explanatory potential of Bernstein's work, the accounts' failure in construing a field of recontextualization impeding mobilization of their pedagogic knowledge.

Chapter 10 draws together the two sets of analysis to summarize the established relevance of Bernstein's theories to the study of knowledge mobilization, drawing particular attention to the inquiry's implications for mobilization of students' multilingual resources and for democratic accountability within the field of education. Areas for potential future research are set out, including expansion of application of Bernstein's work to fields of knowledge; increased use of register as an object of study within language education; the implications for authoring in the prevalence of perceptive processes in interactions with digital texts; and pedagogies which address complex design skills and metalinguistic resources required for the mobilization of knowledge in open societies.

EMERGENCE OF THE PROBLEM

Mobilizing Students' Quotidian Knowledge

Informational Literacies

> *Kind of like all of a sudden you're feeling something and you're thinking why am I feeling this, right? So then it just goes from your feelings, to your heart, all the way to your brain, and you think...*

<div align="right">

Diana, Grade 6
Walter Moberly Elementary
March 23, 2004

</div>

Diana was one of twenty-eight Grade 6 students, nineteen (19) boys and nine (9) girls, at Moberly Elementary School who explored issues of poverty by engaging in dramatic activities taken from Boal's Theater of the Oppressed. In four 80 minute classes, the students of Punjabi, South Asian, Fijian, Sri Lankan, Mexican, Filipino, Vietnamese, Chinese and European origin, a sizable majority with a home language other than English, worked from scenes in a novel by Kit Pearson, a story of a child whose life includes time on the streets of Vancouver. In the interview excerpt above, Diana expanded upon her assessment that the dramatic activities had helped her understand issues of poverty, and described an activity in which her self-selected, embodied response was a ballet pose. Her pose, she later explained, represented hope.

The depth of Diana's emotional response to the activity led her to think more deeply about poverty, and about her own response to the poverty observable on Vancouver's streets. The context created for the activity, her emotional reaction, and her choice of representation pushed her to reflect on what she saw and what she had experienced. From the perspective of myself, her teacher, and the drama facilitator, however, Diana was the catalyst for the discussion that ensued. In the sequence of non-verbal tasks which the activity entailed, other participants had physically gravitated toward her, circling her, leaving most of the theatrical space empty. Diana's embodied response, and her classmates' reaction to it, opened the class discussion which followed

the activity. To the extent that the lesson's design facilitated the discussion, the students' developing ideas were a reflection of the skills of the teacher and facilitator. But the discussion's intellectual depth also depended on knowledge from outside the classroom, the semiotic resources Diana had developed in her after-school ballet classes, knowledge that was owned by none of the adults who were present.

Diana was not alone in her contributions to the richness of the four classes. One of the more powerful moments occurred in the final class, when the students engaged in Forum Theatre. The facilitator had never seen such young students attempt the activity, which required students to step into a short, student-scripted scene, replace an actor, "rewind" to an earlier point in the interaction, and enact an alternative set of communicative choices. The students never paused. They interjected, replayed, altered, confronted, explored, and rejected alternative possibilities offered by the scenario. As actors, their characters chose paths different from the path their character/peer had chosen before, and those who shared the stage were forced to respond to the alternative. In the final moments of the class, Arun took on the role of a passer-by, opening with a series of questions that built to the following interaction:

> *Arun:*   *Kay, don't you guys have friends?*
>
> *Reeha:*   *Well, how would, how would we (unclear) They said to us, that, why should we be your friends? People won't make friends with us. They say "We can't help you."*
>
> *Sunny:*   *We need someone that cares, care for us.*
>
> *Arun:*   *Come with me. I'll take care of you guys. You guys can live in my basement for free. And I'll help you guys out. And take care of your base, base, basic needs and take you shopping and let's go.*
>
> <div align="right">Walter Moberly Elementary
February 11, 2004</div>

In the post-activity discussion, Arun explained that his mother and father had offered their basement to a homeless family recently arrived in Canada, and the family had lived with them until they found a place of their own. When one of the more

powerful students in the class – more powerful academically, socially, athletically – argued that such behaviour wasn't realistic, Reeha stepped in and defended the option, using Arun's experiences as evidence, stating that it was what many people wanted to do but didn't have the courage. Possibilities were opened to students, new ways of construing the choices available in their daily lives. In this context, it was not the semiotic form of the response, but the "content knowledge" that contributed to the remaking of the students' understanding.

In a class in which many students were reading below grade level, informational texts presented a particular challenge. Though the teachers considered the recently published textbooks as relatively free of cultural bias, the students' diverse experiences of the world did not always fit with the perspective adopted by the academic text, a Canadian text which assumed the students' experiences of global and local poverty were shaped by a life lived in a developed nation. The teachers recognized that even students scoring well on summative assessments often failed to demonstrate a meaningful understanding of the topics and issues as they were presented. In the class described above, and in a Grade 5 class beginning a unit on residential schools and the lives of Canada's aboriginal people, teachers Meredyth Kezar and Allison Brightwell chose to experiment with drama as a means of connecting students to the subject matter they would be studying. The result was not a connection to students' background knowledge, but the creation of flows between the multiple contexts the students traversed each day. Simran's response to the writing prompt "This was a good idea" is typical of the class' responses and of their comments in interviews:

> *Because now I know much more about poverty, what it can do to people, and how it works. Before I used to think these people can help themselves, but now I know they need help.*

<div align="right">
Simran, Grade 6
Written Reflection
http://multiliteracies.ca
Walter Moberly Elementary
</div>

The people in the Social Studies textbook and the novel were now the people that he and his classmates saw on the street, the meanings which had been generated in the classroom a new resource for construing the experience of their daily lives. Meanings

flowed in and out of the classroom, among the students and the contexts in which they traveled.

The Emerging Theoretical Dilemma

The vignette painted from data gathered at Moberly Elementary in January and February of 2004 is one of four examples used here to document an emergent theme within the INE, the theme of knowledge mobilization. The teachers' freedom to establish practice-based research claims linked to their multiliterate pedagogies, a key element of the project's research design, resulted in a data set that represents highly diverse pedagogical objectives, classroom practices, and disciplinary contexts. This rich data set has the potential to be explored through multiple theoretical lenses. Yet the diversity within the data, and the teacher's reflections on the relation between their[5] classroom practices and the formal accountability practices of public education, illustrate the practical and theoretical dilemmas of drawing together the seemingly disparate practices into a meaningful whole. How are the practices and their contributions to students' development as meaning-makers to be understood? How might they be theoretically framed such that the commonalities between these practices and those of teachers engaging in other forms of multiliterate, multimodal pedagogies might be drawn together?

The diversity in the vignettes in this chapter is illustrative of the diverse practices documented in the INE. Each centered on a different form of multimodal representation. Each targeted different literacies objective(s) set out in British Columbia's curriculum. Sometimes a unit's design involved an external expert who worked with the students for short period of time. In others, the unit was delivered by the teacher alone. It should be noted that, although the teachers whose work is described believe strongly that students' quotidian knowledge can contribute to their academic success, the concept of knowledge mobilization was never discussed during the term of the INE nor during planning for the units.

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[5] Throughout the inquiry, "their" is used as a singular and plural third person pronoun to mask the gender of individuals.

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As with Moberly, two of the following three vignettes are drawn from the INE, while the fourth is taken from a unit that, though developed and taught after the research project's completion, worked within its stated intellectual parameters and built upon a preliminary analyses of its data. The data for this final example is taken from a student presentation at the University of British Columbia's Faculty of Education Research Day in 2006.

Phonemic Awareness

The Kindergarten teacher who participated in the INE in 2004-2005 had eighteen (18) students whose home languages included Spanish, Vietnamese, Japanese, and multiple Chineses, and whose socioeconomic status, parents' educational background, and home stability varied greatly. In British Columbia, students whose home language is other than English attend full-day kindergarten, the highest priority placed on their English language development. For this teacher, however, English language development did not preclude fostering students' recognition of things they already knew, the quotidian knowledge developed through the experiences of their highly diverse lives. The pedagogical challenge was to ensure her multiethnic, multilingual students valued their home literacies practices, while simultaneously finding ways that such practices could support the students' English language development and traditional academic literacies skills.

Although deceptively simple at first glance, her project was intricately planned to weave together the knowledge and forms of knowledge representation that students needed and knew. In a cycle of whole class discussion, hands-on activities, and individual writing, the students created a personal version of the "Alphabet Chant", a familiar poem used in Vancouver classrooms to support students' phonemic awareness. The unit was completed over five months, from February to June 2005, with an 80 minute teaching block devoted to each letter. At the end of the unit, the students' physical books were bound, and a digitalized copy was uploaded to the web.

The letter "W" can be used to illustrate the teaching cycle of each lesson. Students gathered on the rug, the classroom location for shared discussions, and brainstormed a list of words they knew began with the letter "W." The teacher recorded the list on flip chart

paper. During the process of volunteering and recording, the sound of "w" was repeatedly emphasized as the words were read, the sound elongated, the facial movements for producing the sound exaggerated. Already apprenticed in the process, the students would scan the classroom for visual prompts for further words. After no more words were volunteered, the teacher wrote "www" on the flipchart. The sequence was instantly recognized by several students, who volunteered URLs for sites they visited and then initiated a discussion about home computer use. The teacher then explained that "www" represented "World Wide Web", and the conversation expanded to play with the metaphoric qualities of the term.

Then the students moved to small tables scattered throughout the classroom and authored their "W" page, getting up from their chairs to consult the flip chart paper as needed. The illustrations which accompany their writing exemplify how experience flowed to the page throughout the project: Jason's page illustrated with images of computer games he played at home; Benson's and Rosalie's showing their home computers (Benson's so detailed that he provides a URL); Jeffrey's and Alvina's combining images of webs and the earth in continuing play with the metaphor (see student books at (http://multiliteracies.ca/index.php/folio/viewProject/4). Each child's book was a personal record of the experiences with the letter, and the experiences of the letter were frequently designed to create a flow between home and school. When the researcher and teacher sat with each child individually at the end of the year for the student to read their book, the surprise was not that some children read flawlessly or that students used their illustrations to recall a sound for a letter. The surprise was that almost all the students, even those who struggled or who had been absent from school for extended visits to China, recalled sounds for all the letters, and that students could recount extended stories about many of the pages. Indeed, the teacher and the interviewer had to stop prompting the students for their memories, so that each child might have time to read their book to an adult.

Throughout the INE, teachers at Sir Matthew Begbie and Walter Moberly frequently used the term "engaged" to describe students involved in the project. Thus engagement was chosen as a theme for one of four group interviews held with participating teachers at Sir Matthew Begbie Elementary in May and June 2005. In

attempting to explain what she meant by engagement, the kindergarten teacher offered the following:

> *...one example is when were doing the letter "M', and we were using "Mom", and how "Mom" in so many different languages actually has the "M" sound and how these kids that sometimes don't bring their languages into the classroom were so proud and so, uh, eager to share that "This is how you say it in Vietnamese", "This is how you say it in Chinese", um, and so proud and so willing to, to, and not feel shy about how they were saying it and, if they didn't speak that language, they were able to repeat it in that language and not feel shy about repeating it with a different accent or intonation and, and it was great to see. And so after that, it's almost like so students learned these different things from each other because they were still using it with other things we were doing around in the classroom. So they were, um, internalizing it, uh, if you want to say it or, um, just extension of the learning to other things and relating it to other things, and that's where I've seen it the most. Feeling proud about what they've said and everyone sharing amongst them.*

<div align="right">Renata Caverson
Sir Matthew Begbie Elementary
June 21, 2005</div>

In reviewing the books of children who participated in the research, it is worth noting that Lily chose to write the Chinese character for mother in her Alphabet Chant book, rather than one of the English words available to her.

As with students participating in drama at Moberly, the students in Renata Caverson's class were engaged in the work of school. Focusing on initial sounds, drawing pictures of objects that would support their developing phonemic awareness, learning to write - these are activities one would expect to find in any kindergarten classroom. However, in this room of language learners, the teacher chose to make the

activity more than a simple exercise of identify and recall, instead crafting activities that drew students' exterior lives into the world of school. It was not an addition, another priority demanding its share of the limited amount of classroom time available. Instead, it was woven into her existing practice, adding density to the meanings being made and remade in the classroom.

Visual Literacy and Creative Expression

A year earlier, in a Grade 6-7 classroom two floors above the Kindergarten class, students pored over photos they had taken with cheap, 35 mm film cameras, assessing their success in framing their ideas. A photography/media teacher from a nearby high school circulated among the students, asking students about their photos and providing feedback based on what they had attempted to achieve. During this, the second of two classes he spent with the students, the emphasis was on meaning and how meaning is achieved in photography. The classroom teacher, equally passionate about the potential to engage students through sensory experiences and about the failure of some students to draw from the world around them, had positioned photography at the core of her INE project, twice loaning students cameras for several days to capture images which spoke to them. The photographs later become the raw material for working with digital imaging software and a basis for writing poetry. Such projects are not infrequent in Canadian schools. The question from the perspective of the INE was how such multiliterate pedagogies, the crossings between visual, digital and academic literacies, contributed to the students' capacities as meaning-makers.

In an interview after the first photos had been taken and developed, a young man provided a context for his photos and an explanation of the ideas he set out to capture. A student whose home language was Spanish, he discussed a sequence of photos in which he had positioned a rose in relation to a series of objects, each set of relations expressing how he saw himself in the world. Over the course of the conversation, he spoke of the patterns of light and darkness, the angle of the light, the objects' positions, and the height, angle and distance at which the objects were shot.

But the photo with which he began, and to which the interview later returned, was one of a netless metal basketball hoop, two hands clenched around the rim. His first description of the shot was relatively simple:

That was me hanging on a basketball hoop. This shows one of my hobbies which is basketball which I really love playing and it was probably the first sport I started playing when I was a kid and I am kind of good at it.

<div align="right">

Uriel, Grade 7
Sir Matthew Begbie Elementary
May 11, 2004

</div>

The conversation continued on to other photos. However, it looped back to the shot of the basketball rim, as Uriel appeared to become more comfortable in the interview, and as the complex logic of his photos became apparent. Seeming to misunderstand the interviewer's question as to which picture best demonstrated his skills, he turned the topic to basketball, not photography. Following his lead, the interviewer asked when he began to play:

Uriel: *When I was four. I went to a school at an early age, when I was three so where I grew up we had no basketball nets or anything.*

Interviewer: *So where did you grow up?*

Uriel: *In Nicaragua. It's, uh, it's in Central America.*

Interviewer: *Yeah, were you in the main city or..*

Uriel: *Ni...*

Interviewer: *...were you in the country?*

Uriel: *I was in the city.*

Interviewer: *Uh-huh.*

Uriel: *So I we had nothing there but then we we moved to Canada and I saw my brothers started to play basketball so I ---*

Interviewer: *Older brother?*

Uriel: *Yeah.*

[laughter]

Uriel: *I tried to copy him...*

Interviewer: *Uh-huh.*

Uriel: *...by playing ball. Just bouncing it, bouncing it. Uh, I got a hang of it and, and I, and started playing against other people and then sometimes my brother.*

Interviewer: *If he's older and he wins it's not because he is more skilled, he's just older. [laughter] Why why hanging from the rim?*

Uriel: *The rim to show that, like to show some different kinds of, like, options that you, you can like see there's like some determination. I did this to show determination because it took me six tries to get this one...*

Interviewer: *Mm-hmm.*

Uriel: *...because my camera wasn't working so well.*

Interviewer: *Uh huh.*

Uriel: *So it took me six tries and every time I got some of these...*

<div align="right">

Uriel, Grade 7
Sir Matthew Begbie Elementary
May 11, 2004

</div>

The conversation's rhythm had gradually quieted, but also become more fluid. To finish his last statement, Uriel unfolded his hands, palms upward, revealing the criss-cross of scabbed cuts, still healing from clinging to the rim.

Interviewer: *Oh wow.*

Uriel: *So it was sort of painful but I did it to show determination for the game that I always play.*

Again and again, Marisa Romilly had stressed to her students that they were to capture images that spoke to them, that engaged them sensually, that evoked an emotional response. The cheap cameras had occasionally betrayed the students in their first outing, their inability to focus at short distances blurring and bleaching the more tightly framed shots. However, regardless of the print quality, the students spoke at length about the realization of their ideas in their photography, the semiotic choices they had made in attempting to convey the meanings of the objects and occasional people in their photos. In interviews, the source of their ideas was clear.

> *Interviewer:*   *So do you have a sense that you learned anything or was this already inside of you just waiting to come out?*
>
> *Uriel:*   *I think it was already inside of me but it just wanted to got out to show other people."*

<div align="right">

Uriel, Grade 7
Sir Matthew Begbie Elementary
May 11, 2004

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Marisa Romilly's INE project wasn't unique, although the passion with which she encouraged her students cannot be overstated. What is demonstrated in Uriel's photos and comments, though, as it was in the work of his peers, are the flows the project generated between the students' lived contexts. The ideas were realized in the language of school, in abstract concepts related to visual communication and photography, but school's content was temporarily subordinated to powerful meanings through which students construed the experiences of their lives. This was more than the objectives set out for the project, though perhaps not more than the teacher meant to achieve.

Research and Analytical Skills

On June 9, 2006, six Grade 6/7 students from Sir Matthew Begbie Elementary, accompanied by their teacher and an INE researcher, presented at the University of

British Columbia's Faculty of Education Research Day[6], describing and reflecting upon a project which had required them to draw upon their multilingual capabilities. Their class had researched people's concepts of community, and the practices which made people feel welcome. As a team, they worked on their presentation - the script, audio clips and images in their PowerPoint slides – before reviewing it with their peers to ensure they were accurately reflecting the class' consensus. The class included speakers of Cantonese, Spanish, Portuguese and Mandarin, and the students used the presentation to discuss how home/first language had come to be used in their academic work, and the impact it had on people's learning. As their teacher was on educational leave, most of the guidance they received took the form of written exchanges. Their presentation notes, with the teacher's comments in brackets, provide an overview of the project as well as indicator of the limited support they required:

> *Julia:*   *We did a word search and learned new words that we did not know, like operationalize, and conceptual framework. (Teacher: So how are you going to change this so you use the words instead of talk about them?)*
>
> *Anica:*   *We operationalized our definitions of welcoming, community, and languages. Then we practiced to say these words in our First Languages.*
>
> *Julia:*   *We learned how to expand our questions to make people talk more and then we made our interview questions.*
>
> *Anica:*   *Then we choose and set times for the interview. Before we interviewed the people they had to fill out a form to let us know if we could take pictures and record them.*
>
> *Julia:*   *We interviewed people in their first languages.*

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[6] The elementary school students were the only non-faculty, non-graduate student presenters at the academic event.

> *Anica:* We translated the interviews into English and mounted the answers to the questions on a gigantic graph that was on the wall.

> *Julia:* Then we analyzed the questions (Teacher: Organized by Amanda), triangulated the data, and created conclusions for each question.

> *Anica:* We then transferred the data onto the computer and wrote our personal conclusions.

<div align="right">

PowerPoint Notes
Sir Matthew Begbie Elementary
June 9, 2006

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The students' project was not itself an object of academic research, but a practical outgrowth of the INE. Perhaps because the INE's research design in Vancouver provided a small sum for materials and/or other project support, most teachers targeted multimodality in their research claims, purchasing materials not in the annual school budget. The emphasis on modes and diversity, however, did not necessarily lead to research claims pertaining to language development and/or multilingualism, and so the unit on which these students reported, completed in the classroom of an INE participant, was designed to explore possibilities yet unexplored.

The students' presentation, excerpted above, and their final report (http://multiliteracies.ca/index.php/folio/viewGallerySlideShow/250/545), stand as evidence as to the value of engaging students' multilingualism in support of their academic development. More than seventy percent of the students who conducted the research and wrote the report had a home language other than English. However, the students' presentation, the reflections contained in the report, and the teacher's observations are also useful for demonstrating the challenges inherent in mobilizing students' knowledge, in apprenticing students in practices exemplified by Little Bear and Bohm. In focusing on students' successes, these four vignettes risk over-simplifying the pedagogical expertise required to effect such knowledge flows. MJ Moran, the teacher of these Grade 6/7 students, had tried throughout her teaching career, using multiple approaches, to bring students' home language into the classroom, welcoming, inviting,

and encouraging its use. While she had succeeded in helping students see the value of knowledge gained outside of school, home languages had failed to make more than a token appearance. This unit released the "floodgate", and during the UBC presentation Moran described the uninvited but academically productive, multidisciplinary classroom use of home language which followed the project's completion.

The students' descriptions of their own and others' reactions are perhaps more useful in understanding the complex dynamics involved in drawing on resources from outside the classroom. Amanda, one of six presenters, wrote the following notes on her own response during the first day that home language use was required of the students:

> *I acted different, usually I'm serious and focus on what I'm suppose to do, composed. When I was speaking my FL (first language), I was always laughing, giggling. It's unusual for students to speak a language other than English in front of everyone. Most of the students do not understand what I'm saying.*

<div align="right">

PowerPoint Notes
Sir Matthew Begbie Elementary
June 9, 2006

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Languages were not spoken "in front of everyone", their semiotic potential and the knowledge realized within them discounted not (or, at least, not only) by school, but by the students themselves. Though Cantonese was the home language of approximately half the students in the class, most students, Amanda wrote, "do not understand what I'm saying." Mobilizing knowledge, apprenticing students in drawing upon knowledge gained across multiple contexts, required supporting students in traversing their own rigidly drawn contextual boundaries. Mobilizing knowledge required thinking what had not been thought.

The students in MJ Moran's Grade 6/7 classroom chose to participate in a project that forced them to engage in practices they had not previously been able to imagine. Upon the project's completion, they understood that the research they had undertaken could not have been completed if they had drawn solely on the knowledge assets developed in school. They were also developing a greater appreciation for the complex

role played by language in society, their presentation notes including the following observations on the use of home language in the classroom:

- *A student, Mia, came from China, she doesn't speak English well, yet she was confident when speaking her first languages in front of everyone. We found this interesting, because she is usually quiet and during these classes she always participated.*

- *Another student, Hanser, didn't really want to speak Spanish, his First Language because no one else in class speaks Spanish but people started speaking their first language so Hanser started talking his language too.*

- *Anica who is one of our presenters, acted different. Usually full of energy and catches people's attention. During first language conversation, looking down and very quiet, while speaking Portuguese.*

- *John is uncomfortable to speak in front of the class in English, he does not often offer answers or lead conversations. Using our first language (Cantonese), he was one of the students that always participated.*

<div align="right">
PowerPoint Notes
Sir Matthew Begbie Elementary
June 9, 2006
</div>

School was not teaching students to be multilingual, but the unit supported students' discovery of the potential of their languages, the knowledge it allowed them to access that was not available through other means, and the power of language to afford or block entry.

<center>Mobilizing Knowledge about Classrooms</center>

The question becomes how we might theorize the flows which are evident in these vignettes, including the pedagogies which support students' developing knowledge mobilization practices. The second point then raised is how knowledge <u>of</u> such

pedagogies is circulated. In attempting to represent the teachers' and students' work at national and international conferences, I referred to the density of these teachers' practices, the simultaneous pursuit of goals for the students' academic and social development as they worked across and within modalities and languages. However, no theoretical frame sat easily on the data, and if the work could not be framed theoretically, it became even more difficult to imagine how it might be discussed and shared with educational stakeholders – with the educational research community, parents and peers, administrators, policy-makers and the general public.

And what these teachers reported, with varying degrees of exasperation, frustration, and resignation, was the invisibility of such pedagogies within the formal policies and practices of the education system. Repeatedly, throughout the INE, Elaine Tansley would smile at me and say "No one cares. No one cares, Diane." Such comments by her and others were not taken as a desire for personal recognition - although few of us would strive to remain unrecognized for our work – but as a desire for recognition of what was being accomplished in classrooms, a wish for others to see what children and teenagers experienced, created and meant. No one disputed the obligations and accountabilities of their position. Rather, they struggled with how the enactment of their responsibilities was communicated to others. In attempting to articulate their frustration, the conversations inevitably returned to how information was shared among educational stakeholders, including the use of large-scale assessments.

Knowledge Flows and Assessment Practices

The knowledge flows associated with accountability practices are frequently conflated with large-scale assessment in educational literature. The third research question/theme guiding the INE is similar in this respect, the question appearing to implicitly suggest that large-scale assessments will legitimate (multi)literacy learning and diverse literacy accomplishments. It reads:

How can the development of optimal (multi)literacy learning environments be supported by large-scale assessment policies and practices? What role might assessment play in legitimizing diverse literacy accomplishments

and what options exist for integrating alternative assessments with province-wide assessment policies and practices?

The data collected for addressing this question included in-depth interviews with ten Vancouver teacher-researchers regarding their assessment practices. The interview guide covered a gamut of assessment-related issues, including how individuals carried out assessment, what they did with the information they collected, and the contribution and/or impact of large scale assessment practices on their literacies pedagogies. Again, the data serves as a window to illuminate how knowledge mobilization evolved as a central theme.

Four of the ten teachers interviewed would later become research subjects in the "Alternative Accountability" project. Without belabouring the point, it should be noted that all asserted complex definitions of literacies, Elaine's indicative of the remarks each made:

Well we can be literate in many, many ways. Um, the kinds of, of literacy we're asked to be accountable for tend to be the pencil and paper tasks. Um, but my understanding of, of literacy is being able to derive meaning and communicate your understanding to others and that communication can take the written form, which, you know, that's sort of the expectation, but there are other ways of, of demonstrating understanding as well. Through the arts, through technology. And literacy includes um to me--. Well it's just integrated through all the subject areas. I don't see it as just a language arts thing, a language arts thing. I, I see it as, as deeply connected to mathematics and all the content areas, of course, and the arts. I guess the only thing I'm, I'm not including is PE.

<div align="right">Elaine Tansley, Grade 4-5 Teacher
Interview, Teacher's Classroom
14 December 2004[7]</div>

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[7] The transcription protocol that was followed for these interviews differs from the protocol for other interviews referenced in this thesis. The interviewer (and transcriber) noted her "active

Each commented on assessment practices and policies from the perspective of their classroom. As an English-as-an-Additional-Language (EAL) Kindergarten teacher, Renata Caverzan described herself as relatively unaffected by large-scale assessments. Much of her interview was spent elaborating upon her classroom-based assessment practices, how daily observation and interaction wove into her assessment of a) children's literacy development and b) the effectiveness of her teaching in supporting their growth. Commenting positively on district-based processes for identifying students with special needs, she noted their contribution to conversations with school and district consultants. As a Kindergarten teacher, her frustrations lay not with the requirements of policies and practices of larger education systems, but with their failure to adequately inform parents about learning, the report card one of the few available formal mechanisms:

> *I mean, it's in the report card, but you just can't elaborate as, elaborate as much as you can when you, you talk to the parents about certain things and examples. For instance, um, you could assess, um, oral language development in your students when they first, um, begin to come into the class-room, and then, just the whole process and development--. You're only assessing later where they're at, but it's how they got there that you don't really get to talk to the parents about.*

<div align="right">

Renata Caverzan, Kindergarten Teacher
Interview, Teacher's Classroom
13 January 2005

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In her interview, MJ Moran also provided a relatively extensive description of her classroom-based assessment practices, and their contribution to teaching and learning. Commensurate with a general shift in attitude noticeable at higher grade levels, time was an ever-present concern when discussing large-scale and/or standardized assessments, particularly when such assessments were viewed as having little relation to her students' learning.

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listening" remarks – mm-hmm, yeah, etc. – in a column running parallel to the transcription of the teacher's extended speech turn. All four excerpts referenced here contained no interviewer interjections or comments other than such remarks.

And, I guess maybe one (large-scale) assessment every once in awhile is not such a big deal, it's just that, I tend to have taught Grade Four and then Grade Seven, so ... I, it seems that it takes them a month or a week out of my time, which is sort of, a drag. Um, but, it also, in Grade Seven it comes the same time as high schools are trying to assess, which is a whole other story (cough). A whole other bee in my bonnet you don't want to get into. Um, and um, the intermediate literacies project assesses (x) Canadian Test of Basic Skills and also writing assessments and also um, this other silly thing that they've call an Iris that they've created, so (pause) in the period of a month the Grade Sevens have to do an FSA, they have to do the CAT, they have to do an Iris, they have to do a writing sample, and it's June of great seven. Right, so, it, it's um, it doesn't have to do with anything they're learning, right, like.

<div align="right">MJ Moran, Grade 6-7 Teacher
Interview, Neighbourhood Coffee Shop
16 December 2004</div>

This frustration should not be construed as a lack of concern or dismissal of the importance of "basics", if basics means grammar, vocabulary, spelling and reading comprehension, all of which MJ raised when asked to elaborate upon her assessment of students' literacies development and practices. Cindy Yeung, a high school English teacher, also discussed basics, describing herself by stating that there was "one side of me that is very conservative and, and that, you know, you've got to have your basics, got to know how to write properly." But the theme of time returned again and again in her interview. On multiple occasions she talked herself in circles regarding the "juggling" of time, and the tensions between learning that had meaning for students and learning as it was represented to the public:

So again, it's always a balancing act because there's so much I want to teach the students that are not curriculum-related, they're not exam-related, but, you know, but because they have thrilled me in the past, I can see how they could potentially thrill the students. You know, certain, certain poems, for example. Or, or certain um, you know, again, it just

<div align="center">36</div>

goes back to the variety of assessment. Um, um, I do have a lot of this kind
of assessment, um, the the arts-related projects, for example, even though
they're not going to be on the exam. You know, so you have, you have to
have a balance of that and um--. Yeah, it, it is a juggling act and so as far
as literacy assessment goes, you have to keep in mind um, the, the
required, standardized testing that they'll have to go through that you'll
have to prepare them for and unfortunately, a lot of public eyes are on the
exam statistics. And particularly in our school, being very high profile in
the west side, um, a lot of, of, of people in the community take those
statistics to heart. And, you know, as much as teachers may disagree on--.
Because we know, and you know very well that you can't measure the
quality of students' learning through the provincial exam statistics. And
again, we all know that. Again, but the reality, you know.

<div align="right">

Cindy Yeung, High School English Teacher
Interview, School Library
16 March 2005

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What is and isn't in a provincial exam statistic, the outcome of a large-scale
assessment, and/or a report card traces across these teachers' comments, as do
descriptions paralleling Cindy's perceptions of reality. Reality, as described by these
teachers, is a complex world of learning, literacies, and assessment, one that is not well-
represented to educational stakeholders. Elaine begins and ends with those who are meant
to be served by knowledge of the classroom:

I mean, you could look at it as a natural progression and that, you know,
they are the people who are paying the bills and they are entitled to--. So
we're going to have large scale assessment, damn it, if they want to
[laugh]. We have absolutely no influence down here. It's just sort of an
annoyance. We say we're doing that (using the performance standards)
and our report cards say that we're following the performance standards
but they don't really believe us [laugh] and they have to have the
assessment. You have to convince the Fraser Institute. So, there we go.
Does that make sense? Just that it's, it's a rather frustrating task. Um, um,

because we can assess discrete skills, I think, fairly successfully, but um, then applying a letter grade to all of that and saying that the child is, you know, a very good, um, language arts student. Well, I mean it's just such a massive area. I mean, you can only be good at those few things that you've tested this individual on, but then it's translated into a letter grade and then that letter grade becomes sort of a description of the child, that he's a B student. Um, but we've only, we've only evaluated some small aspect of his, his learning. Um, I think I've, I've, I've tried to, to really, um, look at as many aspects of a child's um literacy as possible and, and um to convey how he's doing to the parents. But it's very frustrating because I don't really think they usually understand what is being communicated to them. Um I don't think the parents understand, um, a lot of the assessment and I, you know, I think that there must be a better way of doing that.

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Elaine Tansley, Grade 4-5 Teacher
Interview, Teacher's Classroom
14 December 2004

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It is not surprising, then, that accountability was the theme taken up from the INE to bridge to a future research agenda, nor should it be surprising that these teachers became research subjects in the subsequent work. The second grant application made the argument for: a) the need for alternative or supplementary accounts of children's literacy accomplishments; b) the need for new forms of literacy accounts that actively engage educators in their creation and evaluation; and c) the need for new forms of knowledge representation that increase citizens' capacity to participate in informed democratic conversations around literacy education in public school systems. But accountability as it is narrowly construed in education is too small a frame for the issues arising from the INE.

<div align="center">

A Second Reflection

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Two sets of practices - the students' use of quotidian knowledge and the knowledge flows between teachers and educational stakeholders as enacted through systemic practices of accountability – have been the focus of the illustrations drawn from

the INE. Although the two sets of practices are enacted on very different scales and for two very different purposes, they both require transference of knowledge from one context to another to achieve their purpose. They demonstrate the practical possibilities and challenges of knowledge mobilization in education, and the need for a theoretical framework which can support their investigation.

An inquiry begins with a problem statement, by identifying a subject, a concept, as its focus (Bernstein 1996, 2000; Jordan, 2004; Mouzelis, 1995; Popper, 1959; Weick, 1989). The problem here is the inadequacy of available explanations for students' recontextualization of quotidian knowledge, and for the pedagogies which support them in these practices. If the theorizing which follows is productive, it will provide a basis for exploring knowledge mobilization in and about highly diverse classrooms, a frame within which to discuss the apprenticeship of students in a valued literacies practice, and the means by which we might consider how knowledge of such practices can be made available to educational stakeholders. The non-school world – the worlds of nations, governments and NGOs, the spheres of social, intellectual and business concerns – have long been concerned with knowledge and the knowledge society, and the creation and management of the associated assets. But the institutions of education, by all appearances, have yet to formally grapple with the implications for schools and schooling. There is no readily available frame in which to begin the conversation, certainly not one which is sufficiently robust for addressing Canada's highly diverse, multilingual classrooms. One could begin with empirical investigations, begin with the work of documenting what exists in practice. However, it would seem more prudent to begin by identifying what is being talked about, what the thing is that is being investigated, to develop the core concepts and hold them out for critique, testing, and revision. The value of theorizing as a tool in relation to knowledge mobilization and the current needs of Canadian education is that it creates a space for conversation.

Yet, as the vignettes from the INE clearly illustrate, students are drawing upon their quotidian knowledge to further their academic success, and teachers are designing pedagogies which support these practices. The challenge of mobilizing teachers' tacit knowledge is the challenge of knowledge management as it exists throughout the public and private sectors. Case studies employing a variety of qualitative research methods can

surface, question, and elaborate upon that which is already tacitly known but which is not yet made explicit, such generalization to theory enriching what we come to know (Bradshaw & Wallace, 1991; Duff, 2006; Llewelyn, 2003; Miles & Huberman, 1994). However, first there must be a theory to which to generalize. Although only a first step, it is by taking a first step that this theorizing can hope to contribute to rich, contextualized studies of knowledge mobilization.

It is in relation to empirical data that the third benefit of theorizing emerges, one that's importance is still to become evident. Although in the early stages, the internationalization of research creates new ethical dilemmas for social sciences researchers, particularly those working with qualitative methods and methodologies. The corresponding moves to standardize ethical and knowledge-sharing policies, the increasing interest in capitalizing on the ability of software and digital communications to mine large data sets, and the possibility funders will require open data are issues yet to be adequately addressed by the social sciences and applied disciplines (Arms & Lawson, 2007; Borgman, 2007; Dede, 1999). The role of theorizing in managing these dilemmas, the potential to use theory to bound consent so as to mitigate against inappropriate data use, merits strategic consideration. In theorizing knowledge mobilization, the hope is to develop a tool that opens exploration of the full richness of students' meaning potential, but that can limit abuse of what children choose to share.

LOCATING A METHODOLOGICAL PATH

Knowledge mobilization presents a methodological challenge, for the inquiry's design must balance the historical requirements of academic scholarship with needs arising from the practice's limited history of investigation. A conceptual analysis is one possible design model, for the inquiry "aims at understanding and improving the sets of concepts or conceptual structures in terms of which we interpret experience, express purposes, frame problems, and conduct inquiries" (Coombs & Daniels, p.27). Certainly, the selection of literature and instances of pedagogic practice chosen for analysis in this inquiry are driven by a concept, and the theoretical development process – or, more accurately, the repositioning and extension of existing theory as theorizing of knowledge mobilization – is undertaken so as to enable development of related "research instruments and policy prescriptions, curricular policies and research studies" (ibid). Thoroughness and clarity, two hallmarks of conceptual analysis, are reasonable standards for assessing this inquiry's rigour. Yet a new problem arises if one attempts to employ this tradition of analytic philosophy to knowledge mobilization, a problem similar to that encountered in approaching the INE data. A first and fundamental step of a conceptual inquiry is to review how a linguistically realized concept has been employed and/or constructed, the exploration into the concept's history within and across disciplines so undertaken "that by getting clearer about certain concepts we will be in a better position to adequately tackle education issues" (Portelli, p. 25). A conceptual inquiry presumes the concept, phrased in everyday or theoretical language, pre-exists the study (Coombs & Daniels, 1991; Noddings, 1998; Portelli, 1993). However, the concept of knowledge mobilization is not yet sufficiently developed for a researcher to engage in a conceptual analysis' logical steps, for no such concept exists as it relates to students and classrooms. To the extent that the concept has been theorized, the discussions appear limited to the transference of academic research to the domains of policy-makers (Levin, 2003; SSHRC).[8] Dede, in his

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[8] It must be noted that since this study began, the literature employing the concept knowledge mobilization has been multiplying. However, it remains relatively small (358 hits on Google Scholar as of May 26, 2008), and largely limited to the efforts by Canadian funding organizations to increase the impact of research on policy and decision-making. The term does not appear in Baskerville and Dulipovici's survey of the theoretical foundations of knowledge management, the terms or taxonomies most similar to SSHRC's usage being knowledge

frequently referenced paper for the U.S. Department of Education, never defines knowledge mobilization, saying only "Knowledge mobilization and use must itself mirror the types of shifts desired in educational practice, moving from passive assimilation of information to active construction of knowledge, so that the process is consistent with the content" (1999, p.1). Hamilton and Drummond, in their description of an action research project being undertaken with the Yekooche First Nation, cite Levesque in defining knowledge mobilization as "the active process of creating linkage and exchange between producers and users of data, information, and knowledge to engage in value-added activities" (2007, p.7). Knowledge mobilization is something to be done, much as it was in the INE, but the thing itself, the process, remains underspecified.

And so, though this inquiry centers on a concept, the specific procedures of a conceptual inquiry within the analytic philosophy tradition of education cannot be employed. This does not, however, preclude one from drawing on the methodology's traditions. Smith, reflecting on the contributions of Gadamer, suggests:

> *…it is not possible, in genuine inquiry, to establish correct method for inquiry independently of what it is one is inquiring into. This is because what is being investigated itself holds part of the answer concerning how it should be investigated. Genuine inquiry always has much more the character of a kind of dialogical messing about, in tune with what the Greeks simply called "thinking." (1991, p. 198)*

A "messing about" with a theorizing of knowledge mobilization can productively employ a conceptual analysis' standards for rigor to concept development/interpretation, and to the explication of relations between concepts, broadly surveying the literature identified as relevant, and extracting from the literature clearly stated analytical points. Thus, the first two moves of this inquiry mirror a conceptual analysis. The problem demanding greater conceptual clarity - the need for a theorization of knowledge mobilization relevant to Canadian classrooms and the Canadian educational context – has been identified, in part by drawing upon vignettes taken from the INE. The next move, an

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transfer/reuse or knowledge sharing (2006). However, these concepts are grounded organizationally rather than socially.

analysis of the relevant concepts, follows this chapter on the method of inquiry. Further, the same understanding of rigor can eventually be extended to theoretical elaboration, the extension of established conceptual relations to new applications or uses. However, before this can begin, the concept "theory" must first be considered more closely.

Theory and Theory-building

If this inquiry is not a conceptual analysis, then by process of elimination it must be termed an exercise in theory-building, a most amorphous process to claim as the basis for one's investigation (see Mintzberg, 2005; Weick, 1989). The barest bones of theory-building – identifying and clarifying relevant concepts; specifying the relations between the concepts; conducting thought trials and/or conducting empirical studies to test the theoretical precepts – give few hints of theory's contested nature, with debates focused on both the pragmatic – how to proceed – and the more existential – what is theory. It is to these two issues the thesis next turns.

Operationalizing Theory

Within the social sciences, an author's theory-of-theory is rarely readily transparent to the reader, an author's conceptualization of theory (though not the theoretical frame from which they proceed) not infrequently ellipsed from empirical investigations. Indeed, respected authors may write on the topic of sociological/sociolinguistic theory yet avoid addressing the term altogether (see Lantolf & Thorne, 2006; Layder 1997, 2006). Theory and theorizing in/as research are equally absent from texts covering qualitative methodologies, the practice of research only tangentially connected to the abstraction of ideas and concepts (see for example Denzin & Lincoln, 2005; Payne & Payne, 2004; Silverman, 2004). However, the wisdom of such gaps is not without its critics, with sociological theorists such as Mouzelis (1995) asserting that these omissions damage communication among social theorists and obscure bases for theoretical agreement and disagreement. The extent to which language implicates the social, and the social implicates language, suggest these concerns are equally relevant to applied linguistics.

Mouzelis' treatise is a useful place to begin specifying the concept of theory which underpins this inquiry, as it not only addresses theory's relevance to his field but also more generally its relevance to society at large. In his argument, he favours a traditional distinction between theory-as-tool and theory-as-end-product, though acknowledging that theory in use is rarely either/or. The theory-as-tool or conceptual framework/paradigm, he believes, is consistent with Althusser's Generalities II, and leads not to "highly positivist," flawed and decontextualized conclusions of theory-as-end-product, but rather:

>…*to context-sensitive, historically-oriented comparative investigations that can throw much light on how the social wholes are constituted, reproduced and transformed (1995, p. 3)*

Arguably, sociological tools are never ideologically neutral. However, in his attempt to establish a principled basis for theoretical comparison, Mouzelis creates space for on-going dialogue about theorizing, including examination of a theory's/tool's ideological premises. The pursuit of this objective, which entails avoidance of "empiricism and/or the compartmentalization of conflicting paradigms," is intended to provide sociological theory a distinctive space in relation to other disciplines such as philosophy, linguistics and psychoanalysis, while simultaneously opening theory to productive critique and revision (1995, pp. 154-155). Theory-as-tool is an apt metaphor for an inquiry into knowledge mobilization, one which seeks to support explorations of practice in and between contexts, rather than to explain the practice of a closed system.

Like Mouzelis, Hasan is deeply concerned with the ability of theories to enter into a dialogue with each other, a "metadialogue" in which "one theory's mode of addressing its problematic – the conceptual syntax (cf. Bernstein, 1996) in terms of which its theoretical goal is interpreted – complements the conceptual syntax of the other reciprocating theories" (2005, pp. 50-51). In distinguishing between endotropic theories, in which the object/unit of study is theorized as self-contained and unaffected by its physical and social environment, and exotropic theories, in which the object of study is a component of a dynamic, open system, Hasan effectively illustrates the narrowed social utility of inwardly-oriented theories. Yet, also like Mouzelis, Hasan emphasizes that

openness does not equate with a blurring of a theory's distinct identity. A well-developed language of description and conceptual syntax, one capable of explaining relations between the phenomena it invokes, becomes essential if a theory is to maintain its unique position in relation to the object of study, and perform its complementary role (2005, p. 52; also Bernstein, 2000).

There are two key points in the theories-of-theory offered by Mouzelis and Hasan which shape this inquiry. The first is the concept of metadialogue. The object of inquiry, knowledge mobilization, can be understood not as an object of theory, but as an object that sits at a theoretical nexus of theories of knowing/meaning and theories of the social context. Theorizing knowledge mobilization is more accurately theorizing the relation between theories, and the well-established dialogue between systemic functional linguistics and the work of the Basil Bernstein becomes a foundation for the analytical work that follows. Second, Mouzelis' perspective on theory-as-tool shapes the exploration of a language of description and conceptual syntax capable of supporting research into knowledge mobilization in Canadian education. The task of theorizing knowledge mobilization in relation to the apprenticeship of diverse, multilingual, multiethnic students in such practices, and to the mobilization of knowledge of related pedagogies amongst educational stakeholders, is not undertaken to formulate an answer. In keeping with Mouzelis, but in a very different disciplinary context, the orientation is to the development of "tentative, flexible, open-ended, transitional frameworks useful for empirical, comparative investigation" (p. 152). Usefulness, as well as explanation, is the goal of this inquiry conducted within the applied fields of education and applied linguistics.

Finally, though neither Hasan's nor Mouzelis' theory-of-theory should be conflated with that of critical realists such as Sayer (1992, 2000), they would likely sympathize with arguments against a theoretical "anything goes." Sayer himself, in refuting the perceived arguments against normative theories, specifically targets theory-of-theory that places any argument beyond examination:

> *Like all relativism, it (rejections of normative discourse on relative grounds) licenses dogmatism while appearing to let one hundred flowers*

bloom, for it allows each to disqualify the criticism of others by claiming
that there are no common grounds for argument. (2000, p. 176)

Theorizing, as it is conducted in this inquiry, is open to argument – arguments regarding the quality of the logic, arguments supported by empirical data, and arguments supporting alternative theories of/for the object of study. It is argument in the best academic sense of the word that Mouzelis and Hasan seek for theory, including argument that crosses disciplines to further illuminate the object of study. This is not to say that there are not differences between the two scholars' theorizations of theory. It would be difficult to imagine Hasan, a linguist, asserting that systemic functional linguistics is theory-as-tool in the bi-polar contrast proposed by Mouzelis. However, these differences merely serve to strengthen her point, that a strong language of description and well-developed conceptual syntax enable exotropic theories to dialogue with theories of related phenomena, the arguments impacting on a theory's internal coherence only to the extent that the dialogue reveals new aspects of the object of study not previously considered.

Processes of Theorizing

When theory and theorizing becomes the object of discussion, usefulness is a not uncommon theme (see Bhaskar, 1979; Jordan, 2004; Llewelyn, 2003; Mouzelis, 1995; Sayer, 1992). Interestingly, one of the more engaged, on-going discussions regarding theory building and theory use has been occurring in organizational studies, where the organization rather than society(ies) provides the context for the object of study (see for example Bourgeois, 1979; Chermack, 2006; Llewelyn, 2003; Lopez, 2003; Ghoshal, 2005; Storberg-Walker, 2006, 2007; Storberg-Walker & Chermack, 2007; Sutton & Staw, 1995; Van de Ven, 1989; Vermuelen, 2005; Weick, 1989, 1995, 1999; Whetten, 1989). Such work is particularly relevant to this inquiry, the key parallel the contextualized, contingent nature of human practice.

Organizing the presentation of a theorizing process requires categorizing activities, and the presentation of categories can imply a linearity which, though sometimes held as an historical ideal, bears little resemblance to the practice of theorizing (Mintzberg, 2005; Weick, 1989, 1995, 1999). Weick has described theorizing as

"disciplined imagination", and throughout the organizational literature one sees homage paid to the "intuitive, blind, wasteful, serendipitous, creative quality of the process" (1989, p. 519, see also Mintzberg, 2005; Van den Ven, 1989; Weick, 1995, 1999). In other disciplines as well, one sees evidence of the abiding sense of wonder that guides the theorist, Bernstein, Hasan and others describing the personal nature of theorizing as they think through the problems they encounter in their academic endeavors (Bernstein, 2000; Hasan, 2003, 2005). Indeed, if there is a model for theorizing, it is in the reflections of such senior scholars, in the integrity of their continuous rethinking of an intellectual nub over the course of their life's work. Theorizing as practiced in this inquiry cannot hope to attain the depth of such seasoned work, but it can be understood as emulating a continuous reworking of whole and parts at every "stage" of the process.

Though theorizing begins with a problem – or, as argued in Chapter 1, an opportunity – it is not an exercise in problem-solving (Weick, 1989). Rather, it is sense-making, an admittedly reductionist process which, in attempting to judiciously slice away the extraneous, brings clarity to what might and should be attended to. But discipline is the other dimension to the imaginative process, perhaps the greatest discipline staving off the human tendency to prematurely close oneself to alternative explanations and to discount data which does not fit tidily with one's forming conclusion. If one must choose a mechanistic metaphor for theorizing, then, it is more akin to parallel processing, the messing about consisting of near constant thought trials of evolving theorized relationships (Bourgeois, 1979, Weick 1989). The inquiry's formal tests draw from the empirical research conducted as part of the study "Alternative accountability." Consciously and semi-consciously, however, thought trials conducted throughout this inquiry have drawn upon the ethnographic research of peers, teaching contexts lived and observed, the experiences of co-workers and employees in multiple worksites, and the lives of friends and family.

In a later chapter describing the empirical data, greater detail will be provided about the temporal and physical context of the theorizing. However, there will be no description of memoing, no references to listing, no description of a systematic indexing of ideas. To describe this process as thus would be to misrepresent the notebooks of unintelligible sketches, the rarely-worth-reading scratches in the margins of journal

articles, the bars of Gershwin or Porter hummed while reflecting on a transitory theme, the quality of a child's question, the obsession with a word. A description of process gives sense of the emergence of the ideas, but the quality of the theorizing is to be judged in the logic of the argument that follows.

Conceptual Development

Having established knowledge mobilization as the problem requiring investigation, the second element in a theoretical inquiry is to establish the relevant concepts. Storberg-Walker and Chermack, in their work on adult education and human resource development, have described a five component approach to the process, which they label the conceptual development phase of theory-building (Chermack, 2006; Storberg-Walker, 2006, 2007; Storberg-Walker & Chermack, 2007). As with a conceptual inquiry, the need to explore multiple ways of understanding is emphasized, with priority given to demonstrating the "pertinent logic of past theoretical work" to the concepts and relations being developed (see Sutton & Staw, 1995, p. 373). However, in contrast to the more lexically-oriented examinations of concept-in-use described in the aforementioned conceptual analysis literature, their model suggests examining a range of theories and theory-research processes. The broader scope is more appropriate to an object of study which sits at a theoretical nexus, and which seeks to develop conceptual tools for a less-examined concern.

The problem of knowledge mobilization, along with the framing of the SSRHC grant "Exploring Alternative Accountability", requires examination of three concepts: accountability, knowing/meaning-making, and social context.

1. Accountability
   One of the central purposes for accountability systems in the public sector is to mobilize knowledge about the performance of government, its agencies, and its institutions. Yet INE participants asserted that among teachers, schools, their communities and/or educational institutions, information-sharing regarding rich classroom meaning-making practices was generally ineffective, this problem becoming central to the second

grant. Thus, accountability becomes a core concept in this inquiry, the selected literature focusing on the relation between the enactment of accountability and its ostensible purpose. The well-researched context of education accountability systems in the United States provides a touchstone for this concept's development, with the inquiry radiating outward from this focal point to broader concerns regarding public sector accountability and the social histories that have accompanied its evolution. Where possible, consideration is given to the construction of "literacy" in such systems, as knowledge mobilization is itself a literacies practice.

2. Knowledge realization and meaning-making

An inquiry into knowledge mobilization must include a concept of knowledge/meaning and how meaning is realized within social contexts, for it is impossible to discuss flows of knowledge across contexts without discussing knowledge in context. Further, given that meaning-making practices for which this inquiry is developing theoretical tools are multimodal and multilingual, the concept of meaning-making/knowledge realization must include but also extend beyond the linguistic. Thus - but not only for this reason - the central node selected for examining the concept of meaning-making is social semiotics, as it affords a coherent basis for discussing multiple semiotic resources. Halliday's systemic functional linguistics (1998, 2002, 2004; Halliday & Hasan, 1985; Halliday & Matthiessen, 1999) and Kress and van Leeuwen's (1996/2006) visual grammar anchor the exploration, which includes consideration of the challenges posed by the shifting modalities of privileged texts, and of researchers' attempts to grapple with issues of multimodality in elementary and secondary education. An effort is made to identify critical issues still absent in current educational research on multimodality, particularly issues arising from the shifting affordances of digital technologies, and the capacity of existing multimodal frameworks to encompass continuing changes in representational possibilities.

3. Mobilization and contexts

    If knowledge mobilization is moving knowledge across contexts, then a concept of context is the third essential element in its theorization. Here, Bernstein's sociology of pedagogy is evaluated to determine its adequacy for theorizing context in related investigations (1990, 1996; Hasan, 2003). Bernstein's theories, particularly the pedagogic device, have been selected for two reasons: a) as a sociology of pedagogy, Bernstein's theories have been specifically developed for the contexts central to this work and b) research has demonstrated the ability of Bernstein's theories to engage in a metadialogue with SFL. To develop tests by which to assess the appropriateness of Bernstein's theory for the inquiry's task, the basic premises of knowledge management are used, adapted to reflect the societal (in contrast to organizational) orientation of the inquiry.

Formulating Relations

    Theory-building, in contrast to a conceptual inquiry, requires theorizing the relation between concepts[9], with Weick referencing Homan in describing "theory construction as the concurrent development of concepts, propositions that state a relationship between at least two properties, and contingent propositions whose truth or falsity can be determined by experience" (1989, p. 517). How relations are conceptualized within this inquiry has been determined, in part, by positioning theorizing within the tool/end product and exotropic/endotropic dichotomies, and by the implicit if not previously explicit non-relativist stance to theorizing. Yet even within these parameters, conceptual relations may take multiple forms, and their form impacts the work that the theory may reasonably be expected to perform. Accepting that a critical "measure" of any theorizing is its usefulness – at least within applied fields – and that conceptual relations are implicated in assessing the value of theorizing to its context of proposed use, the conceptualization of such relations also needs to be made transparent.

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[9] It would be incorrect to state that a conceptual inquiry never specifies relations between concepts; the point here is only that it is not required. As with many dimensions of theory and theorizing, the categories are rarely hard and fast in practice, though their definitions may make them appear as such.

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The intent here, then, is to continue to clarify what this particular piece of theorizing is good for, so that the reader might assess the quality of the inquiry against its stated purpose, the development of conceptual tools useful to investigations of knowledge mobilization.

One of the more thoughtful and systematic examinations of relations between concepts has been undertaken by Llewelyn (2003), who proposes five "ways" or "levels" of theorizing: metaphor, differentiation, conceptualization, context-bound theorizing of settings, and context-free "grand" theorizing. Each has a different relation with empirical research; the strength of each is relative to the nature of the inquiry. In asserting all five are legitimate modes of theorizing, she explicitly rejects definitions that equate theorizing with the generic or abstract, proposing instead that the contextualized and the abstract are equally relevant to theorizing/making meaning of the world. In this, her conceptualization of theory is consistent with researchers in the field(s) of organizational studies, who routinely consider context-embedded generalizations as theories (see Sutton & Staw, 1995; Wetten, 1989, Weick, 1989, 1999). Nonetheless, the levels in her model move from the more to less concrete, from metaphors which theorize "by image-ing and grounding experience" to context-free theorizing which attempts to explain "impersonal, large-scale and enduring aspects of social life" (p. 667).

Attempts to explain "how contexts for practices are organized" (p .675); that is, theorizing "concerned with the social conditions under which these practices are reproduced" (ibid) are this inquiry's purpose, and thus it may be considered level four theorizing. The relations are not a linking of the familiar to the unfamiliar (metaphor), nor are they the relations of dichotomies or classifications (differentiation). Rather, they are relations "between" - relations between contexts, relations of meaning traveling across contexts – as they are theorized at a particular nexus of social semiotics and Bernstein's sociology of pedagogy. Level four relations inevitably involve metaphor, difference, and concepts, for "between" relations cannot be theorized without these tools, but also include the additional requirement of explanation.

Implicated in "between" is the allocation of resources, the force of structure, the location of power. But agency will also become a point of discussion, though against the foregrounded systems of voice and register, themselves manifestations of the larger social

structures at play. Llewelyn considers theorizing of agency as best accomplished through level three theorizing, the "highest" level at which the individual remains an inquiry's object of study and the last level at which the empirical and the individual retain primacy in relation to macro concerns. However, Flyvbjerg (2001), in reimagining the agenda of the social sciences as phronetic research, suggests the rigid bifurcation of actor/structure or agency/structure is historical rather than necessary, though he admittedly focuses on methodologies more appropriate with Llewelyn's level three.[10] Importantly, at the most fundamental level of their theorization, social semiotics and systemic functional linguistics unite the possibilities of and the pressures on the realization of meaning in any given context, establishing conceptual relation(s) between structure and agency (Halliday, 2004; Halliday & Hasan, 1985). Bernstein states that his theory "…attempts to show both the limiting power of forms of regulation and their possibilities, so that we are better able to choose the forms we create rather than the forms to be created for us" (2000, p.210). As examinations of knowledge mobilization require consideration of both, this is a further argument for selecting social semiotics and Bernstein's theories as points of departure.

Having established this inquiry as a theorizing of relations "between," relations which explain as well as describe, it follows that such relations are developed with and subsequent to the development of the core concepts. These relations, the stuff of the messing about, provide the basis by which the theorizing may be tested and it is to considerations of theory testing that the thesis next turns.

Boundary Criteria and Testing

In remaining consistent with the theory-of-theory drawn from Mouzelis, Hasan, Sayer, Bernstein and others, theorized conceptual relations are open to critique and to assessment against empirical data, the boundaries of the theorizing effectively (and presumably) providing the reasonable limits of what is open to testing. It is useful here to pause and consider how boundary work is carried out at different levels of theorizing, for the location of boundary work in a process of inquiry reflects, at least in part, the

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10 The prevalence of the agency-structure dichotomy as an essential dilemma in sociological theory creates its own challenges for any researcher attempting to reimagine its relations, as evidenced in Kramsch and Whiteside's classification of Norton as a "structuralist" (2007).

inquiry's place within the historical trajectory of the philosophy of science originating in Europe, and its corresponding orientation to deductive and/or inductive reasoning (Jordan, 2004; also Freese, 1980).[11] In empirical research, and particularly in case studies, a critical component of the inquiry's design is bounding its domain, including the actors, practices, and/or context(s) which are the object of study (Yin, 2003). Boundary work is largely conducted at the outset of the inquiry, undertaken prior to the design of methods and tools for data collection, making boundaries an input to the empirical study and data analysis. In theorizing, boundary work is accomplished by specifying the concepts and logical relations of the tools or model, the process of theorizing specifying the domain within which it might appropriately be tested (Dubin, 1978; Llewelyn, 2003; Weick, 1989).[12] Thus, boundaries are an "outcome" not an "input" to the process of inquiry, preceding formal testing but part of the concurrent development of the theoretical tool's concepts and logical relations. Pragmatically, it should be evident that a clean, hard break between the two modes of reasoning is difficult if not impossible to maintain, the "bottom-up" process followed in developing this study's problem statement leading to a "top-down" inquiry into conceptual relations. However, within the process of this inquiry, the boundaries of this theorizing are being specified at the inquiry's mid-point.

Logically, the propositions against which the theorizing is tested also follow the development of the conceptual relations, for propositions are "…concise statements about *what* is expected to occur…," assertions of the theorizing's explanatory potential (Sutton & Staw, 1995, p. 377). To the extent that they can be ascertained, Dubin suggests developing strategic propositions, "those that state critical or limiting values for one of the units involved" (1978, p. 168). Although numeric values are not appropriate in this context, strategic propositions can also be understand as notable if the subsequent empirical tests result in a relatively unambiguous either/or, either corroboration of the

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[11] There is more than a little irony here, in an inquiry engaged in theorizing knowledge mobilization, that boundary work is described solely in relation to the research traditions of the Enlightenment, thereby implicitly sanctioning the principle that boundary work is a necessary research practice. This, and the absence of the philosophical and epistemological traditions of indigenous and other non-European cultures from general texts on method and methodologies, is (perhaps) an early and illustrative example of the principles of the pedagogic device at play. (Bernstein 1990, 1996)

[12] Dubin explicitly states that he does not differentiate between model and theory.

theorizing or a need to modify concepts, their relations, or the theorizing's boundaries. However, increasing/limiting the boundaries of current theory is by itself a limited contribution to the field. Substantiating a work as a genuine theoretical contribution requires tests that generate new understandings and/or lead to improvements of the theoretical tool (Whetten, 1989, p. 493). Processes of good theorizing leave themselves open to such tests, and though the formal propositions evolve at a later point in the inquiry, the need to remain open to testing is a point of reflection in all stages of the process.

Placing the Author

From all but the most positivist perspectives, the theorist is recognized as being in the theorizing, not separate and apart (Dubin, 1978; Flyvbjerg, 2001; Llewelyn; 2003; Sayer, 2000; Storberg-Walker & Chermack, 2007; Weick, 1999). The meanings through which experience is construed forestall any possibility of an "objective" position in relation to an object of study (Halliday, 2004; Halliday & Matthiessen, 1999), the framing of investigative task, the decisions regarding the selection of thought trials and/or empirical evidence, and the interpretive task of analysis but a few examples of the human judgements that are inherent to theorizing. The theorizer moves between perception and reflection, the practice of reflexivity an instrument for improving explanation (Weick, 1999, p. 803). The theorizer is in the theorizing here, in the decisions regarding the scope of the inquiry, in the design of the software used to author the data analyzed later in the study, and in the classroom observations and interviews of stakeholders, students and teachers, conducted under the umbrella of the INE and the second SSHRC grant. Although the place of the theorizer will be discussed more fully in relation to the empirical data, it is appropriate to acknowledge the relation between theorizer and theorizing in laying out the process of the inquiry.

Summary

The design of this theoretical inquiry into knowledge mobilization is strongly influenced by two factors: a) the relative absence of previous theorizing of knowledge

mobilization and b) the context in which the absence was identified, which led to the framing of the SSHRC grant "Alternative Accountability." Although the nature of the problem does not lend itself to a conceptual inquiry, the process of theorization draws on such inquiries' standards for rigor, specifically the breadth and clarity required in analyzing the core concepts.

The elements of the inquiry may be briefly summarized as follows:

1. Identifying the problem - The problem, the need for a theory of knowledge mobilization appropriate to Canadian education, surfaces from a preliminary analysis of data collected during the INE, and has been illustrated using brief vignettes from the data set.

2. Operationalizing theory – For the purposes of this inquiry, theorizing is understood as the development of conceptual tools useful to future investigations of knowledge mobilization in Canadian education. As theorizing at the nexus of theories of knowledge/meaning and theories of social context, it is designed as an engagement in a theoretical metadialogue and is open to critique and empirical tests.

3. Developing concepts and concept relations - In developing conceptual tools useful for future investigations of knowledge mobilization in Canadian educational contexts, theorizing must include a) specification of the relevant concepts and b) clear communication of the relationship between these concepts. The selection of concepts is driven off the nature of the problem, and concepts are developed by analyzing a broad representation of related literature. As "between" relations are the focus of the inquiry, relations are specified following concept development.

4. Establishing boundaries and testing – Boundaries are an outcome of theorizing, and establish the frame for testing. While tests may take the form of thought trials or empirical research, theorizing must be open to empirical investigation. Data draw from the SSHRC-funded investigation

"Alternative Accountability" will be used to test propositions relevant to the theorized concepts and their relations.

5. Placing the author – The author is never outside theorizing, their perspectives and understandings of the world at play at every stage of an inquiry process.

Theorizing in Applied Linguistics and Second Language Acquisition

Theorizing in applied linguistics has been largely and deliberately set aside to this point, not because no literature exists, but rather because it is difficult to succinctly summarize the contentious and sometimes unfocused arguments without immediately being perceived as taking sides in the debate, potentially clouding communication of this inquiry's process. That said, it would be irresponsible not to situate the work within the field of its central concern, this thesis being unambiguously within the field of applied linguistics given that a) language is central to all that follows, and b) the education of multilingual students is a significant research concern within the field. As well, as in all academic research, the author bears responsibility for demonstrating the value of their endeavor to their field, justification of their mode of inquiry being part of that demonstration.

Within applied linguistics, one of the more extended exchanges on theorizing has occurred within the field of second language acquisition (SLA) (see for example Beretta, 1991,1993; Block, 1996; Firth & Wagner, 1997, 2007; Gregg, 1993; Gregg, Long, Jordan & Beretta, 1997; Jordan, 2004; Kramsch & Whiteside, 2007; Lantolf, 1996; Larsen-Freeman, 1997, 2007; Long, 1990; Thorne, 2005; van Lier, 2004; Watson-Gegeo, 2004). Maintaining the focus on the theorizing, what follows addresses the points raised in these exchanges. This decision is not without its problems, for in focusing on this particular exchange, theories and theorists who were not participants remain unacknowledged. [Note: For recent overviews of theory in SLA, see McGroarty (Ed.) (2005); Miller & Zuengler (2006); Swain & Deters (2007); for work on identity and language learning, see for example Block (2007); Norton (2000), Norton-Pierce (1995); for the continued application of Vygotskian concepts of learning to SLA see for example Lantolf & Thorne (2006); Swain (2006); Swain et al (2009); for application of complex systems theory to

SLA, see for example Churchill (2007); Jessner (2008); Larsen-Freeman & Cameron (2008); van Geert (2008).] Still, the focus here is on practices of theorizing and not the theories themselves, and the basis for which theories might engage in a dialogic relation. With the inquiry's methodological foundations established, the points raised in the exchange provide a basis with the inquiry may be laid alongside the debate and assessed for what it might offer the field.

Theorizing Theory in Second Language Acquisition (SLA)

Placing this inquiry within the field of applied linguistics returns the discussion to theory-of-theory, and here the inquiry draws heavily on Jordan (2004), using his monograph on SLA as both point and counterpoint in the discussion. Jordan provides an extensive argument supporting the field of SLA's existence within applied linguistics, a field that exists not at a Kuhnian pre-paradigmatic stage of development, but one which does, can, and should benefit from a diverse perspectives and methods of inquiry. The argument against the need for a paradigmatic theory of SLA, an argument which untangles historical and philosophical dimensions of Kuhn's thesis while simultaneously refuting more extreme claims of positivism, is located within Jordan's thoughtful guidelines for a critical rationalist approach to SLA.[13] Balancing his critique of demands for a paradigmatic theory of SLA, Jordan - like Hasan, Mouzelis and many others from whom the design of this inquiry has drawn - unambiguously asserts the value of criticism to a field's development, stating "…all theories should be open to as much criticism as possible" (2004, p. 116). In agreeing with Jordan, in valuing critique and criticism, this inquiry establishes a standard by which it may be assessed, all but demanding questions from the reader; requesting dialogue rather than acceptance. A messing about has value only to the extent it engages others and their concerns.

As it is impossible to discern what science signifies in the context of the current debate, no position is taken here as to the value of scientific inquiry to the field's development. Science is not infrequently deployed as an untroubled concept, a weapon of choice for denouncing the unreasonableness of one or the other's position. Little of the

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[13] Jordan's footnotes, containing personal memories of lectures given by Popper, Kuhn, Feyerabend and others, wittily illustrate the contentious and evolving nature of theories which are sometimes presented as smooth, polished stones.

passionate debate within the sciences - the borders of the sciences, the method and methodological tensions within and across these borders, the differences in what it means to know - are evident in the singular concept "science" frequently used in SLA debates on theory, and it is beyond the scope of this thesis to unpack all the term might hold.

The inquiry's use of "field" rather than "discipline" is deliberate, and while noting Jordan's similar selection, Bernstein is again the more important reference. For Bernstein, a discipline "…is a specialized, discrete discourse, with its own intellectual field of texts, practices, rules of entry, modes of examination, and principles of distributing success and privileges;" a region - or in language comparable to Jordan's, a field - is "…a recontextualizing of disciplines into larger units which operate both in the intellectual field of disciplines and in the field of practice" (1990, p. 156).[14] The commonality is their recognition of fields as inherently heterogeneous, Jordan's stance evident in his critique of Gregg's imposition of a Chomskian framework onto SLA theory:

> *Even if Gregg were right to insist that a property theory is an essential part of a theory of SLA (and we certainly need some description of the competencies and skills involved in SLA, perhaps, but not necessarily in terms of a linguistic theory), this does not imply that without it we would get nowhere. The fields of linguistics, cognitive science, neurolinguistics, psychology, sociology, and anthropology, to mention some, are all involved in attempts to explain SLA, and the history of science, not to mention plain common sense, tells us that we need not wait until we have an adequate property theory before we offer hypotheses, partial explanations and tentative theories of any of the complex phenomena that make up SLA. (2004, p. 109)[15]*

It is the complications of context that places a disciplinary purity outside the reach of an applied field. Here, there must be linguistics, because linguistics is what is being applied,

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[14] Field is a separate theoretical concept in Bernstein's work; region is the word used to contrast with discipline.

[15] One of Gregg et al's (1997) and Jordan's (2004) sharpest critiques of responses to their work on SLA theory is that the responders over-generalize separate positions taken by the four authors.

but there must also be a theorizing of something more, because there is application. The something more, the specific theoretical nexus, develops from the object of study, the rigor of the study deriving in part from the selection and logic of the theories co-applied. The more frequent selections involve a theory of mind and/or a theory of context, the selections reflecting the precise research questions. This is true of this inquiry, the object of study leading to concepts of social context being prioritized over self/identity.

It is because of the complications of context and the necessary co-application of disciplines within the applied linguistics/SLA fields that one may quibble occasionally with positions taken by Jordan. Although I agree with the need for theory that explains, entailing a) coherent, cohesive theorizing lacking internal contradictions and b) the possibility of empirical tests, I disagree with his general dismissal (although not always his specific critiques) of ethnographies of communication and, by implication, descriptive research in general. Supporting his point that "we need to define the terms used to describe individual differences and social factors in such a way that it becomes possible to make predictions and do empirically-based studies that will tend to confirm or challenge the explanation" (p. 264), I am left to wonder how such definitions evolve without the kinds of rich ethnographic work undertaken by Duff (1995, 2001, 2002) and in which she so thoroughly apprentices her students (see for example Guardado, 2008; Morita, 2000). In positioning this instance of theorizing in relation to SLA, this inquiry may be understood as working within a circle of theorizing, for as Llewelyn argues regarding theoretical relations:

> *Structures (as roles, rules and regulations) exist throughout the levels of theory analysed here, but the opportunity of changing them lies in practice. This observation indicates that these five ways of theorizing may be better thought of as "points on a circle" (that juxtapose metaphor with the "view from on high") rather than "rungs on a ladder" (that position level one and level five as far apart as possible)...The relationship between "levels" is often recursive – in the sense that higher levels incorporate the "levels" beneath them...(2003, p. 689)*

And further that:

...the lack of theorizing at levels one, two and three has led sometimes to an inappropriate use of levels four and five theories to understand and explain action, agency, emergence and change (2003, p. 699-700)

In agreeing with Llewelyn, and in recognizing metaphor and "lower" levels of theorizing as specifying a form of concept relations, a relation is established between this inquiry and the debate on metaphor in the theorization of SLA (see for example Gregg et al, 1997; Lantolf, 1996). This inquiry accepts (as does the full spectrum of participants in the debate) that metaphors contribute, but also argues that metaphors must be open to challenge and critique, and that those who in engage in theorizing at the level of metaphor must warrant the relevance of the metaphoric relations they assert relative to their object of study and to alternative metaphors/relations. Such obligations arise whenever description blurs into metaphor, as it inevitably will in the course of this inquiry.

One last point is necessary regarding Jordan's treatise on theorizing SLA. Given the balance generally demonstrated in his work, and given his scholarly background, it may be that his comments on functional theories of language reflect the limits of the scholarly work he has encountered. The sheer range and volume of theory that he traverses is exceptional, his knowledge of Universal Grammar (UG) by all appearances much more than cursory. Yet, while recognizing the limitations of UG to SLA, he summarily dismisses "functional grammar" and its potential contribution, though research on first language acquisition conducted by Hasan and others provide exactly the type of empirical evidence of complex phenomena that Jordan desires for SLA (Cloran, 2000; Hasan, 2003, 2004; Williams, 1999, 2001). Part of the contribution of this inquiry, then, is a warranting of a reconsideration of his stance.

Knowledge Mobilization and SLA

If one accepts Jordan's guidelines, this inquiry's theorizing of knowledge mobilization is unacceptable to theories/as a theory of SLA for several reasons, not the least that requiring a "theory of" SLA rejects the premise of theory-as-tool, and that the presumed objective of problem-solving is incompatible with this inquiry's orientation to

a problem. Further, the shared interest in multilingual students not withstanding, knowledge mobilization's object of study is meaning not acquisition, and acquisition is the domain of SLA. However, unless one believes that language and meaning can be tidily divided into two discrete sets, theorizing of knowledge mobilization may speak with SLA around their common interest in language, although perhaps not in a dialogically exotropic relation such as theorized by Hasan.

In sharing both the theoretical space of applied linguistics, and an intellectual focus on language and multilingualism, a conversation between a theorizing of knowledge mobilization and SLA might begin with Jordan's guiding questions, modifications of Chomsky's questions Jordan finds productive despite the limitations of UG to theory(ies) of SLA (2004, p. 260):

> What is L2 competence?
> How is L2 competence acquired?
> How is L2 competence put to use?

Arguing that the three questions need not be viewed as steps in a process, but rather as possibilities for simultaneous investigation, much of his attention is nonetheless focused on theories pertaining to the second question, the area in which he believes the greatest theoretical progress has been demonstrated. Yet, if one's central interest lies in language education, the second question cannot stand alone, for what a learner will learn and how they will use it preoccupies the teacher and learner from the first day. And a research question(s) that purports to address any one of these questions independently presents its own set of challenges, for a researcher must substantiate the difference between what is used and what is known, and between what is accepted and what "it" is.

These are questions of the performance/competence debate, a debate I will - perhaps unjustifiably - sidestep, the inquiry outlined here not equipped to address its substance or nuance. But the issue of L2 competence raises the question of what, exactly, the learner is supposed to be competent in - that is, what we mean when we say language, and what it means to put language to use. It is this question that is implicated in Watson and Firth's (2007) description of an interaction between an Egyptian and a Dane regarding a problem with a dairy shipment, and that Kramsch and Whiteside (2007) raise in describing interactions between a Mayan-Spanish-speaking businessman/community

member and other multiethnic, multilingual members of his U.S. community. Fundamentally, the issues are no different than those raised by Duff in her study of Canadian high school classrooms (2001, 2002). Such scholarship continues to trouble what have seemed foundational theoretical concepts in SLA, including the concept of interlanguage, which implicates a singular from and to, "…the accumulation of ever more complex linguistic structures and the increasing fluency in their use" (Larson-Freeman, 2007, p. 774). However, the problematizing of interlanguage, NS/NNS and learner has yet to yield a perspective capable of addressing the three questions posed by Jordan, the theorizing often a grappling of mixed metaphors. Larsen-Freeman describes the field as "beset by dialectics" (2007, p. 784), her discomfort with parallel theoretical worlds evident in her own revisiting Watson and Firth's original 1997 article and the conference paper that preceded it. Yet in her work as well there is an absence of "what," what is this thing L2 competence – or, for that matter, language – that is being acquired; what is the thing Bialystok refers to as language proficiency in her call for "…criteria that supersede the theoretical squabbles and point to critical landmarks in language mastery…" (Bialystok, as quoted in Jordan, p. 259).

In aspiring to dialogue with rather than compete against SLA, and in imagining how the desired conversation might unfold, it seems useful to set the inquiry alongside these inevitable questions regarding the constitution of mastery and acquisition - somewhat conflated in the above quote – and consider how researchers might reflect upon the two. Watson and Firth (2007) and Kramsch and Whiteside (2007) suggest their subjects are displaying mastery, negotiating complex social and organizational contexts despite limitations arising from grammatical forms which may or may not have been acquired. However, it would do a disservice to learners to suggest that mastery of a context is mastery of contexts, to lose sight of the highly contingent nature of language use. And within the field of applied linguistics, it would be a disservice to conceptualize mastery as social mastery, foregoing further analysis of linguistic mastery, or to lose sight of the impact of an individual's linguistic resources on their agentive capacities.

It is knowledge mobilization's theoretical position at the nexus of language and context that offers a useful vantage for exploring how language competence is put to use - or, from the perspective of this inquiry, use as constituting language competence. In

this, the inquiry takes a position consistent with that articulated by Halliday, who has responded to such questions with:

> *You can say, in effect, 'I accept the distinction (between performance and competence),' but I will study performance…In other words, you say there is a 'sociolinguistic competence' as well as a linguistic competence. Or you can do what I would do, which is to reject the distinction altogether on the grounds that we cannot operate with this degree and this* kind *of idealization. We accept a much lower degree of formalization; instead of rejecting what is messy, we accept the mess and build it into the theory (as Labov does with variation). To put it another way, we don't draw a distinction between what is grammatical and what is acceptable. So in an inter-organism perspective there is no place for a dichotomy of competence and performance, opposing what the speaker knows to what he does.* (1978, p.38)

In focusing on an individual's capacity to draw on semiotic resources in furtherance of personal and social aims, the dynamics of power and social reproduction are necessarily foregrounded in the following analysis of knowledge mobilization. Only with consideration of context can the relevant questions about language be asked, questions regarding the meanings realized in the text, the grammatical systems drawn upon in its construction, and the text's success or failure in advancing an individual's efforts. Within such analyses complexity is defined not by syntactic structures, although the systemic resources of language are implicated, but by the complicated interplay of individually held resources, contextually available meanings, and semiotic and social systems. As will be seen, register is selected as an analytical fulcrum because it affords a basis for examining an individual's linguistic and visual selections in relation to the complexities of context, with all the messiness this entails. Yet for all of this, an inquiry which seeks a conversation with theorizations of SLA must warrant its value to the field, must address the very reasonable question "What can I do with this?" The answer begins with the benefits which accrue to applied fields in employing multiple research

methodologies, and with the employment of usefulness as a criterion for evaluating theorizing. Whetten asserts:

> *Theorists must convince others that their propositions make sense if they hope to have an impact on the practice of research. If the theoretical model is a useful guide for research, by definition, all the relationships in the model have not been tested. If all the links have been empirically verified, the model is ready for the classroom and is of little value in the laboratory. (1989, p. 491)*[16]

If the concepts and relations developed over the course of this inquiry withstand initial testing, perhaps the inquiry's conversational contribution is its reflection on the ways in which those learning additional languages draw upon and employ their multilingual resources, and the nature of the linguistic/semiotic competencies required to engage in such practices. Perhaps the conversation might begin again with the complexities of the situated use of language, and a focus on the pedagogic practices and metalinguistic skills which expand a learner's agency. A conversation requires more than one willing participant, and so the inquiry may only offer an invitation. However, in theorizing how semiotic competencies are evidenced in use, there will be a place from which a conversation might begin.

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[16] Whetten's use of laboratory is primarily metaphoric, as most organizational research is conducted in organizations.

CONCEPTUALIZING ACCOUNTABILITY AS KNOWLEDGE MOBILIZATION

Empirically and theoretically, knowledge mobilization is considered from several distinct perspectives in this inquiry, not least of which is the perspective offered by formal accountability systems purposed for generating flows of knowledge between public education systems and the general public. The capacity of such systems to generate meaningful information on the progress of ethnically, culturally, and linguistically diverse students shaped the empirical study, the challenges and opportunities of Canada's diverse student population doubly implicated when considering the circulation of knowledge *in* and knowledge *about* public classrooms. Within the context of the empirical research, accountability was realized as a set of practices, practices which will be used to test the theorizing of knowledge mobilization. However, accountability is also an abstraction, a concept which requires investigation before testing can proceed.

This chapter examines the contested notions of accountability that have taken root in Anglo-Saxon cultures over the last several decades, and the unresolved questions regarding the movement of knowledge between the public and its institutions. Using the well-researched American educational context as a foil, the chapter demonstrates the limits of performance-based accountability models and of reliance on narrow bands of indicators as contributors to informed public decision-making. An examination of such systems' performance against their stated goals, as represented in current literature in education, creates space to reflect on the efficiency and effectiveness of accountability systems, opening a path for imagining alternative practices that might supplement and/or replace those currently in place, and for transforming issues of educational accountability to issues of knowledge mobilization.

Accountability in the Public Sector

The language of accountability has become highly charged within countries with strong Anglo-Saxon histories, the word "accountability" itself an English language construction that moves uneasily into other languages. "To be accountable", "to be held to account", "accountable for", "give an account of oneself/one's activities" – none of the

various collocations or permutations can evade communicating the differential powers of the one who is accountable for and the institution/people to whom one is accountable. Within open societies, the responsibility of elected officials to their constituents and/or public servants to the public weal has always constituted a form of accountability. But shifts in the orientation of many democratic governments, attributed by some public policy researchers to the economic and political conditions of the late 1970's and early 1980's (see Aucoin, 1990; Behn, 2001; Bovens, 2007; Power, 2003), gave rise to new forms of accountability, ones which emphasized accountability for outputs rather than inputs. This New Public Management (NPM), a label assigned to the practices subsequent to their enactment, took particular hold in New Zealand, Australia and Great Britain, and to a lesser extent in North America and Western Europe (Aucoin, 1995; Barzelay, 2001; Borins, 2000; Denhardt & Denhardt, 2003; Power, 1997). In its practice, if not its theorization, NPM drew from a particular stream of operational research that advocates establishment of clear and measurable goals, objective evaluation of attainment, and positive and negative reward structures.[17] In recontextualizing such research and practices, undeniably rationalist, from organizational to institutional contexts, discourses from the fields of public management, accounting and organizational theory were brought into a new relationship with the well-established disciplinary discourses of political science, philosophy, and liberal democracy. [18]

The result of these new arrangements has been a continuous reconceptualization of accountability, a contentious struggle by disciplines to assert their classifications and framings on public policy and public policy administration. The difficulty of generating abstractions capable of gaining broad-based acceptance has been exacerbated by differences in national political and organizational structures, as Mulgan (2003) illustrates by briefly contrasting ministerial accountability within parliamentary systems, and institutional accountability within the framework of the American separation of

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[17] "Theory" was not and is not the goal of all operational research, and it would misrepresent studies of processes, models and frameworks to presume such intent, although an epistemological worldview can invariably be teased from such work.

[18] Harmon (1995) offers an accessible, lucid conceptual analysis of the problems that occur when the rationalist discourse of public administration is extended into the realm of responsible government, drawing on Alasdair McIntyre's description of practice in an attempt to reconcile what he terms "the paradox of accountability."

powers. One of the few constants in these academic exchanges on accountability is the centrality of knowledge and the exercise of control over its construction. To illustrate, consider that the performance-based accountability systems that underpin NPM and similar initiatives exist as information; that is, the goals, objectives and measures of the performance management system are statements of the organization's meaning – why it exists, who it serves, and what it will perform.[19] The relative authority of an individual or agency within such systems is reflected in their power to define, assess, and control their existence as it is realized in meaning/information circulated in the system. It is this realization, the measures of performance in relation to goals, that supports an individual's/organization's relative power. Thus, as Day and Klein (1987) point out in their description of the historical origins of political accountability:

> *…if accountability is about reciprocity between individuals in face-to-face settings, and as such is a good thing in its own right, it is about the distribution of authority in complex political and organizational settings. The ability to call people to account defines the locus of authority in any given society. (p.9)*

Day and Klein's opening to their analysis of British public administration accountability practices, perhaps more than they realized (or were willing to acknowledge), draws attention to a central dilemma generated by (relatively) newly theoretical arrangements of accountability. Studies of organizations and studies of political and social institutions have little or no means of acknowledging the other's fundamental categories, for organizational theory rarely addresses the institutional, and social theories undertheorize the organization.[20] Accordingly, in theories of the "public," organizations lack substance, for as Pesch (2005) wisely reflects:

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[19] Kaplan and Norton's "balanced scorecard" (1992, 1993, 1996), although a more recent manifestation of such frameworks, exemplifies this orientation. It is frequently referenced in public sector research addressing the alignment of organizational goals with appropriate and relevant measures, including those cited in this paper.

[20] Sassen (2007) makes a related point, noting the conceptual and empirical problems which arise when different scales of global social ordering are presumed to be "…organized as a hierarchy, let alone as a nested hierarchy" (p. 18).

...organizations do not fit into the liberal model of publicness. The model considers the individual on the one hand and the domains of state, civil society and the market on the other hand. Organizations only start to emerge after the liberal model of publicness came to figure as the template for the liberal state. Therefore they somehow had to be positioned in the liberal public/private scheme, which was problematic due to the fact that organizations as a phenomenon are different from the individual, the state, society and the market. (p. 127)

But the reverse is also true. Theories of organizations have limited ability to address the social, to consider the needs of the public other than as the atomized and/or aggregated rationalist interests of individuals. The rationalist discourse that underpins the strong version of performance-based accountability models assumes that individuals will orientate themselves to organizational goals in response to systemic rewards and punishments, but offers little basis for examining the interests served by the goals, and/or the unequal power distributions which are realized in their articulation. Further, while private sector organizations function in relation to a (relatively) common purpose as set out by the Board of Directors and/or senior management, targeting their efforts at profitable market sectors, public sector organizations serve the competing interests of a non-homogenous public. Organizational performance management systems, by virtue of their rationalist underpinnings, struggle to adjust to social contexts in which service delivery is diffused across multiple providers; is targeted at those individuals whose health, economic status, etc. make them unattractive to for-profit businesses; and is legally required to ensure the differentially privileged receive equitable access (Behn, 2001; Fountain 2001b). The variously configured conceptualizations of accountability – managerial, political, professional, democratic, legal, moral – and/or the conceptual inquiries that explore the relation between responsibility and accountability, give little appearance of acknowledging actors/agents that are central to theories with which they are in new relation.[21]

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[21] Mulgan's analysis (2003) of the complex balancing of accountabilities, of the tensions between their equally valid claims, and of the practicalities of sometimes incommensurable demands for clarity and effectiveness, offers another perspective on the multiplicities of accountabilities that

If "who should be accountable for what to whom and by what means" is fundamental to all examinations of accountability and, at a deep level, if there is no consensus as to "who" constitutes "who", then there should be little surprise that goals, measures, perceptions, and formal assignment of accountability display remarkable disconnects or decouplings when accountability systems are enacted in the public sector (see Behn, 2001, 2003; Brignall & Modell, 2000; Cavalluzzo & Ittner, 2004; Day & Klein, 1987; Modell, 2004; Mulgan, 2003). Radin , who was a Special Advisor to the Assistant Secretary for Management and Budget in the U.S. Department of Health and Human Services after the passing of the American Government Performance Results Act (1993), contrasts the simplistic representations of available knowledge in rationalist theories of accountability with the problematic ambiguity evident in empirical studies of public sector performance-based accountability systems (2006). Unrealistic assumptions underpinning such performance management initiatives, according to her critique, include: that information is available and in a form appropriate for performance management; that information is neutral; that programs have clear and simple goals; that cause-effect relationships can be clearly defined; that baseline information is available; and that almost all activities can be quantified (2006, pp. 184-5). The consequence of these false assumptions is the sometimes unjust assignment of formal accountabilities, an impossible relationship between goals and individuals' ability to influence and achieve. Conversely, public service employees' self-described accountabilities not infrequently extend beyond their organizational or their organization's functional capacity to serve public interests, exhibiting a sense of the social absent from rationalist accountability theories (Day & Klein, 1987; Kelman, 2006; Leithwood, Steinbach & Jantzi, 2002). Thus, the decouplings are more complicated than the mechanical misalignment of goals and responsibilities, the meanings which individuals make of their place at once and neither those accounted for by organizational or social theories.

Others directly address issues related to the public mobilization of knowledge. New forms of transnational cooperation, and the global nature of pressing political, social

is less rooted in the social/organizational ambiguities. Like Harmon, he is not afraid to critique the sterility of purely rationalist practices that implicitly assign external monitoring and/or compulsion a dominant role in human motivation; however, he argues for the place of accountability systems within a larger framework of democratic government mechanisms and within discussions of responsibility and responsiveness.

and environmental issues take deliberations beyond traditional frameworks for political accountability and public transparency, perhaps in no region more than the European Union (Benz, 2007; Bovens, 2007; Papadopoulos, 2003, 2007; Sassen, 2007). Papadopoulus (2007) considers how the increasing prevalence of policy networks and service integration, which characterize multi-level governance, impacts upon a citizenries' ability to understand and act upon public sector decision-making:

> …*"Shared responsibility" and lack of visibility are aggravated by the frequent "multi-level" aspect of these (network) forms of governance. The relations between actors involved in networks are weakly exposed to public scrutiny, or to the scrutiny of the legitimate, democratic, and representative bodies. (p.483)*

Confidential consultations, a legitimate requirement in the search for intergovernmental compromise, require participants to earn and maintain the trust of their collaborators, which in turn requires commitment to their needs. As Papadopoulos points out, such peer accountability theoretically accords greater respect for social justice criteria but only if the consultative body is sufficiently diverse and representative. Balanced representation is difficult to assess and mechanisms for returning agreements to elected governments for public scrutiny are as yet poorly developed. He calls for "closer familiarity of the mass public with the realities of complex, decision-making processes, and thereby an increase of its evaluative competence that would permit the reduction of informational asymmetries" (pp. 485-486).

Rigid, reductivist controls pose their own set of risks. Application of traditional internal control practices to policy development and analysis, including the extension of auditing and management accounting practices beyond the verification of legal and managerial transactions, receives withering criticism from within the accounting profession (see Pentland, 2000; Power, 1997, 2003). Smith & Schiffel's meta-analysis of large scale state/provincial and municipal performance measurement processes concludes that none of the accounting disciplines have the professional expertise to independently address issues of performance measurement and that there is "nothing from the history of accounting or its specialties to indicate that accounting can or should serve a 'line'

function of determining or executing strategy" (2006, p. 610). Power (1997) expresses grave concern with public misrepresentations of audit's functions and capabilities, including but not limited to the obfuscation of the central role of human judgment in audit practices. When audit/accountability/performance outputs are publicly disseminated as numeric "facts", he argues, public discourse is damaged for:

> *…the operational reality of auditing has a problematic relation to the democratic ideals which drive it. Most audit reports and their related accounting statements function as labels which must be trusted. They do not form a basis for communication and dialogue. Paradoxically, the audit society threatens to become an increasingly closed society, albeit one who declared programmatic foundation is openness and accountability. (pp. 127-128)*

The absence of a theoretical space that accommodates the social and the organizational, the dissonances obscured in theoretical ambiguity, are necessarily resolved in the socially constructed realities of daily practice, and resolve in ways for which neither rationalist discourses nor political theories can fully account. In effect, the recontextualization of theories of accountability into fields of public administration yields something distinct from, though reflective of, its theoretical origins. Power's concern is that the nature of the knowledge circulated to the public can act in a fashion diametrically opposed to the stated objectives of public accountability initiatives, which target improving public information flows about government performance. The presentation of isolated numeric indicators, sanctioned by systems and professionals, hides from public view the complex sets of interrelationships and performances which have led to the output, hides the trade-offs and decisions required for its achievement, and transforms a series of judgments into a fact. In short, it hides what the indicator means.

Obviously Power, a chair at the London School of Economics, is not arguing against the value of audits or audit practices, or against the theoretical value of performance management systems. The meaning of an audited figure should, to those involved in operational/organizational decision-making, communicate more of the complexities of its assembled meanings than can be understood by the general public.

What can be taken from Power is a concern for unexamined processes of recontextualization, the movement from accounting/organizational theory to public policy/political theory and then to public administration practices, that results in practices and indicators whose effects are poorly understood. This concern for the unintended consequences of assemblies of meaning is frequently raised in many of the critiques of NPM and accountability systems.[22]

The gaps which occur in the translation of theory to policy to practice are spaces which afford agency to public sector employees. Research on information technology initiatives for service coordination and delivery in areas as diverse as trade, the military, and transportation, undertaken after the announcement of the Clinton-Gore "National Partnership for Reinventing Government" (the successor to the National Performance Review), emphasizes the power of established public service managers (Fountain, 2001a). Although addressing performance rather than accountability per se, disconnects and decouplings were again in evidence; however, Fountain sees continuity in these dilemmas. The inherent challenges of public service, though intensified by the same external changes - speed of transfer and transformation of knowledge, increasingly complex networks of global interaction – impacting education, are nonetheless the space of opportunity.

> *Multiple rules and games provide scope for strategic action and institutional change. Bureaucratic policymakers and other strategic actors transform organizations by consciously framing, managing, interpreting, and leveraging these contradictions. (Fountain, 2001a, p. 200)*

Page (2005) reaches similar conclusions in his study of human services in The United States and, more particularly, Georgia, Maryland, Missouri, Vermont and Washington. Increasing clarity in objectives, collaboration between agencies, use of performance indicators, and local autonomy are traced to local problem-solving efforts

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[22] See for example Alford and Baird's (1997) analysis of differences in the range of public performance indicators developed for branches of the Australian public service; Johnsen's (2001) discussion of the risks of rigid central planning in public sector implementation of balanced scorecard approaches; and Kelly's (2005) description of the inherent incompatibility of the constructs of customer and citizen, and related issues of objective versus subjective satisfaction.

and program reviews launched in the 1970's, rather than implementation of large-scale implementation of NPM policies. Yet, a sterile focus on indicators, regardless of the locus of their development, unaccompanied by the value infusion that links indicators to the larger mission, risks the successful creation and transfer of knowledge by rewarding defensible behaviours that fail to draw on organizational judgment and wisdom (Kelman, 2006). Behn (2001, 2003), in his scathing (and sometimes humorous) critiques of the wholesale import of business-oriented accountability systems into the public sector draws attention to the same point. For Behn, an observer of the American context, the greatest risk of aggressive accountability systems is an increasing overemphasis on finances and fairness, and a corresponding decrease in performance, as agencies and individuals seek to mitigate risk rather than foster responsibility. Like Power, he is concerned with indicators that misrepresent performance – in this case, prioritizing indictors of legal and financial probity. Yet he also portrays public sector managers as effective agents in defining and enacting accountability, perhaps the most capable in determining what results an agency might deliver and the mutual responsibilities that must be acknowledged for the results to be achieved. More than those concerned with multilayered networks of policy development, he foregrounds public servants' active participation in formulating alternatives.

What emerges from the empirical research in the public sector is concern for the particulars of the framing of accountability, the ways in which meanings are constructed and represented within the contexts and specific discourse of the unit(s) being investigated. The measures and/or indicators detract or enhance the quality of information exchanged; the practices of accountability restrict or expand the flow of knowledge. Control over meaning marks one's authority within the organizational apparatus, and empirical studies demonstrate that accountability systems are, inevitability, organizational. The larger social relations, the implicit or explicit relationship with a public, never entirely disappear, showing themselves in the informal if not formal accountabilities described by those in the public's employ. But the ambiguities of competing accountabilities leaves unresolved how knowledge might move between the public and its organizations, thus leaving open the question as to how democratic accountability might be enacted.

Accountability in Education

The recontextualized discourses of educational accountability, the means by which things/meanings are assembled within education, are unique objects of interest in their own right. As research into public sector accountability demonstrates, between the accountabilities distributed to public sector organizations and what is recontextualized/reassembled within their sub-units, there are slippages, movements, space for agency but also space for unanticipated enactments of institutional power. As a recontextualizing field, education cannot reject the responsibilities and accountabilities which it is assigned, cannot escape the influences of its place within the distribution of power and of the historical categories and framings asserted by those with greater influence. But the constitution of accountability within education is an act of ministries, departments, academic institutions, districts, schools and classrooms, aggregations and networks of meanings framed by the choices of those within the socially constructed categories.

A significant portion of the research literature in this section explores educational accountability within the United States, for despite substantial differences in the American and Canadian educational contexts, they share common histories and concerns:

1. Although an educated citizenry is a key variable in international assessments of national competitiveness and social and economic well-being, education is a provincial/state jurisdiction, local school boards retain a sizable share of the political accountability for school district operations, and control and allocation of resources is the result of a complex set of policies and political decision-making enacted at multiple points within and across organizations.

2. As early members of the OECD, Canada and The United States are long-standing participants in international education research and benchmarking practices, allowing macro comparisons of the educational outcomes.

3. Both nations have high levels of immigration and populations of significant linguistic and cultural diversity.

4. The participation of Canadian language and literacy researchers in American-based research associations, the status of American research journals in assessments of Canadian academic performance, and the flow of researchers and research across borders marks the influence of American ideas in the Canadian context, and the need to address this literature directly.

In addition, perhaps more than in any other context, American educational accountability systems have been the subject of intensive academic research, with investigations employing multiple methods across a range of issues.[23] The sheer volume of studies adds rigour to the work, sharpening the questions that can be raised about how knowledge is shared with stakeholders in public education systems.

The United States offers not only well-researched examples of the recontextualized discourses of NPM, but also evidence of the continuities of practice that new accountability frameworks have sought to disrupt. The current emphasis on performance and outputs can be traced to the early 1980's, when the dominance of the American business sector was threatened by Japan's increasing international economic stature, and "A Nation at Risk" drew analogies between the nation's economic and educational performance (Cohen, 1996; Fuhrman, 2004; Fung, Graham & Weil, 2007; Harris & Herrington, 2006). The 'crisis' in education – and it was and sometimes is termed a crisis - was framed as a national issue. In response, the Consortium for Policy Research in Education (CPRE), a collaboration of researchers from a powerful set of American educational institutions (Harvard University, University of Pennsylvania, Stanford University, University of Wisconsin-Madison and University of Michigan), was

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[23] Canadian educational researchers such as Michael Fullen, Andy Hargreaves, Lorna Earl and Kenneth Leithwood are internationally-recognized experts on educational change, a topic which no one could have addressed over the last several decades without touching upon accountability systems. However, within the context of their work, knowledge mobilization and data for decision-making have primarily been addressed in relation to school leadership and organizational change, not formal accountability systems and the public circulation of knowledge, the central interest of this paper.

established to research and consult with school districts and states on performance and accountability issues, a consulting relationship which suggests an influence well-beyond the impact of their published papers.

Drawing on discourses of quality and management-by-objectives (MBO), new accountability systems benchmarked school level performance, while (at least theoretically) reducing the detailed regulations governing school activities (Fuhrman, 2003). Five key assumptions consistently underpin such systems:

- performance/student achievement is the goal of schooling;
- performance can be accurately measured;
- consequences motivate teachers and students;
- accountability will result in improved instruction and performance; and
- unintended consequences of such systems are minimal.

Although at the state and national level, accountability programs have continued to evolve, the five core assumptions have not changed and have served to frame much of the subsequent research. Two pieces of federal legislation currently play primary roles in accountability in American education: a)"The Individuals with Disabilities Education Act" and b) the "No Child Left Behind Act of 2001" (NCLB), which governs the distribution of extended financial support for disadvantaged students. Jurisdictionally, education is a state responsibility, but federal government funding for at-risk populations is dependent upon compliance with the act, making it difficult for schools to ignore its requirements, particularly schools that serve disadvantaged populations and/or that have limited alternative means to raise funds.[24]

NCLB requires public reporting of school outcomes and annual yearly improvements (AYP) of schools not meeting established standards (U.S., 2005). Public performance indicators are one of two central control mechanisms in accountability systems (de Wolf and Janssens, 2007). The presumption is that effectively informed parents are better able to challenge schools' weaknesses, and thus contribute to performance improvement efforts. Under NCLB, annual school report cards must include

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[24] Although a causal relationship is difficult to establish, Carnoy and Loeb (2002) found that prior to NCLB, states with histories of litigation regarding structural inequalities of school financing, large residentially segregated minority or low-income neighbourhoods, and/or larger school systems operated stronger accountability systems.

performance data on reading/language arts and mathematics,[25] and data must be disaggregated for populations considered at-risk. Information about the right to school choice must be provided to parents whose children attend schools that fail to attain their AYP target for two consecutive years, and tutoring or similar forms of learning support is to be offered to children in these schools.

Although the punitive measures are more dramatic than those imposed under previous legislation, NCLB marks a continuation rather than a shift in national and, in many cases, state approaches to accountability. School performance outcomes are test outcomes. The United States has long tradition of using standardized tests to inform educational decision-making, including use of the SAT® for screening college admissions and the Graduate Records Exam® (GRE®) for assessing students' appropriateness for graduate studies; the New York Regents Exam has been administered since the 19th century. Before NCLB passed, all fifty states had developed some form of standards-based accountability, with forty-eight using state-wide assessment indicators and two leaving the choice of assessment instrument to the discretion of local institutions (Goertz & Duffy, 2001). Conceptions of evidence and tests find their origins in the introduction of scientific methods to education in the early 20th century, Gamson (2007) arguing that earlier conflicts over the IQ scores, stratification of expectations, and ability grouping are linked to current preoccupations with large-scale testing, and that:

> *Although the IQ test no longer holds center stage in American education, the central role played by standardized achievement tests, linked to a top-down accountability system, highlights the continuing legacy of an overly narrow conception of the kind of scientific research that supplies evidence to educational decision-makers. (2007, p. 41)*

Whether or not one disputes Gamson's claim regarding scientific research in education, the historical vantage reveals current accountability measures as the latest manifestation of long-established American educational practices, a particular interpretation of scientific that combines with a managerial orientation to accountability

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[25] Recent federal legislation has added science to the subjects for which testing is required, and most states are ahead of the federal timetable for implementation (U.S., 2007b).

to unambiguously target measured school outcomes. [26] Perhaps this is the only clear point across the literature, for the apparent clarity of simple performance indicators obscures a contentious debate regarding the recontextualization of accountability discourses into American educational thought. Yet, regardless of these debates, simple indicators are a justifiable basis for evaluating the effectiveness of American accountability models in relation to the political/democratic dimensions of accountability, for the numbers are the only form of information legally mandated for public circulation, and therefore carry an authority disproportionate to other forms of knowledge that may be voluntarily provided by districts or schools. As the interest of this inquiry is knowledge mobilization, and the numbers are the formal flow of knowledge between schools and the general public, the numbers are the focus of what follows.

The "What" of Accountability

Given that American accountability systems accord the public a role in monitoring performance, the public may justifiably ask "Am I being provided with good information about school performance and improvement?" Further, as accountability systems envision school choice as a mechanism for improving school performance, assuming that schools will work to retain and attract students, parents/caregivers should be able to trust and use the provided information in exercising choices regarding their children's education. In this section, the quality of information provided to the public is evaluated as it relates to educational performance, to factors influencing educational performance, and to language and literacy education.

Educational Performance

Power's concern with isolated indicators is that they hide rather than provide meaning. Educational outcomes as measured by high stakes tests are a case in point. Behind the single score indicators lie a complex set of technical debates about testing, and about high stakes testing in particular. The researchers who comprise CPRE and

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[26] McDermott and Hall (2007), as part of an entertaining essay on scientific research in education, contrast the contested nature of educational data to the Bush administration's attitudes to scientific data on global warming.

those of Center for Research on Evaluation, Student Standards, and Testing (CRESST) draw upon the *Standards for Educational and Psychological Testing* (AERA, APA & NCME, 1999) to emphasize that the validity of any test can only be determined in relation to intended uses (Baker, 2007; Baker & Linn, 2002; Elmore, 2004a; Elmore, Abelman & Fuhrman, 1996; Fuhrman, 2003; Linn, Baker & Betebenner, 2002). For large-scale standardized tests, relevant concerns include the alignment of test content and curricula; the establishment of performance standards and the comparability of the outcomes; classification errors resulting from test precision; the allowance of multiple methods for demonstrating competence; and the validity of the test for those whose home language is other than English and/or who have learning disabilities. The comparability of year over year data constitutes another potentially problematic issue. On any one of these points, the quality of the scores provided to the public is frequently contested.

The performance indicators reported to parents are the outcomes of state tests. The current report by the U.S. federal Department of Education (2007a) emphasizes absolute test scores, reporting that the percentage of 4th and 8th graders reading at or above Basic was higher in 2007 than in either 1992 or 2005, and that the percentage of 4th and 8th graders, white, African American and Hispanic, scoring at or above Basic or Proficient was higher than in all previous assessment years (p. 11). Although acknowledging areas of weakness, the overall tone of the report communicates positive momentum. However, trends in NAEP reading scores for participating urban school districts (see Table 1) are more equivocal (U.S., 2007b).[27] Comparisons of

Table 1
Changes in NAEP reading score

District	Grade 4		Grade 8	
	Since 2002	Since 2005	Since 2002	Since 2005
Atlanta	↑	↑	↑	↑
Austin	—	↔	—	↔
Boston	—	↔	—	↔
Charlotte	—	↔	—	↔
Chicago	↑	↔	↔	↔
Cleveland	⊢	↔	—	↑
District of Columbia	↑	↑	↔	↑
Houston	↔	↓	↔	↑
Los Angeles	↔	↔	↑	↔
New York City	↑	↔	‡	↔
San Diego	—	↔	—	↔

↑ Indicates the score was higher in 2007.
↓ Indicates the score was lower in 2007.
↔ Indicates there was no significant change in the score in 2007.
— Not available. District did not participate in 2002.
‡ Reporting standards not met. Sample size was insufficient to permit a reliable estimate for New York City in 2002.

SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2007 Trial Urban District Reading Assessment.

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[27] The National Assessment of Educational Progress (NAEP) assessments are supervised by the National Assessment Governing Board, appointed by but independent from the Secretary of Education and constituted of governors, state legislators, local and state officials, educators, business representatives and members of the general public. Drawing on a national sample of public and non-public students at Grades 4, 8 and 12, assessments are conducted periodically in mathematics, reading, science, writing, the arts, civics, economics, geography and U.S. history.

overall NAEP results for 1990 to 2001 to those for 2002-2005 shows no gains in reading achievement, a trendline for math unchanged from pre-NCLB, and no change in the achievement gap between white and minorities (Lee, 2006). Further, changes in state tests and testing policies, including changes to cut scores, performance descriptors, and assessment targets, raise serious questions about the comparability of data over extended time frames, particularly comparisons to data gathered prior to NCLB's implementation (Center for Education Policy, 2007c). Darling-Hammond (2006) points out that high school graduation rates have declined in some states that have implemented exit exams, most noticeably for Black and Latino students. And the optimism contrasts with concerns expressed in the most recent OECD report on American education, which emphasizes stagnant figures for completion of high school and tertiary studies, and for performance in mathematics (the subject area most recently studied), with American students currently performing in the bottom third of the thirty participating countries (2006).[28] It must be recognized that individual tests may assess different skills and/or content, despite superficial similarities in subject areas. However, given that American students show few gains in educational achievement when they write common exams, a reader would be justified in questioning reports of improved performance outcomes based on state tests, and thus the quality of information provided to the public.

But conflicts between gross indicators, not all of which are equally accessible to the public, raise but the first set of questions regarding the quality of information they are provided regarding educational performance. Repeatedly (and increasingly), studies raise questions about the structural quality/meaningfulness of current individual indicators. Methodological and logical flaws in the calculation of AYP, related but not limited to state differences in cut scores, content standards and the rigor of state tests, are particularly problematic given the significant penalties imposed on schools failing to meet their targets (Linn, 2003; Linn, Baker & Betebenner, 2002). Requirements for AYP achievement across all sub-groups disproportionately penalize racially diverse schools, as

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[28] In the U.S., 39% of the population between the ages of 25-64 has completed tertiary education, compared to Canada (53%), Japan (52%) and Korea (49%), the three highest ranked countries (OECD 2006b, 2006c). Current American participation rates in tertiary education are below the OECD average, which will continue to lower the American average for at least the next several years. The percentage of American students who enroll in tertiary education and complete their studies is among the lowest in the OECD.

schools with one sub-group performing below AYP on one indicator is sufficient for a school to be classified as low-performing (Kim & Sunderman, 2005).[29] Using NAEP and NCLB data, as well as Department of Education census figures, Belafenz, Legter, West and Weber (2007) sampled 202 high schools across the U.S. to identify the extent to which NCLB identifies and stimulates improvement in low-performing high schools. Commenting on the findings of their logistic regression analysis, they write:

> *In sum, the case studies indicate that there is an Alice in Wonderland character to current implementation of the NCLB accountability framework: for high schools, up is down and down is up. Some high schools that are making AYP (annual yearly progress) and by implication are being told that they are doing fine have extremely low, or even declining, graduation rates. Other high schools are making significant improvements in both achievement proficiency levels and graduation rates and are facing the most extreme NCLB sanctions because their starting points were so far below the baselines established by their state. As a result, it is not possible to use the AYP indicator to determine how many or to what extent the nation's lowest performing high schools are improving. (p. 579)*

Against a background of contestable interpretations and potentially false indicators, the position that the public is adequately informed about education's performance outcomes is not defensible.

Factors Influencing Educational Performance

Of the five assumptions that underpin American accountability systems, the first two – performance is the goal of school and performance is measurable –establish the purpose of schooling and circumscribe the knowledge which will be publicly circulated regarding school performance. The second set of assumptions - consequences motivate teachers and students; accountability improves instruction and performance; unintended

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[29] In the spring of 2008, up to ten states were made eligable for a relaxation of penalties typically imposed by NCLB on schools failing to meet AYP (Dillon, 2008).

consequences of such systems are minimal – are process factors; that is, they are assumptions regarding the means by which the goals will be obtained. Process indicators are progress indicators. They provide information as to whether individuals and/or organizations are engaging in practices that will allow them to achieve their performance goals. In the dominant model of American accountability, there is no requirement for schools, districts or states to publicly circulate information on either correlations or effects of accountability systems on teacher quality and/or instructional practices.

There is no lack of research on the impact of accountability systems on instruction, despite its lack of public accessibility. Drawing on OECD studies of PISA outcomes and educational systems, Barber and Moushad's (2007) recent international meta-analysis identified three factors common to high-performing school systems: "getting the right people to become teachers, developing them into effective instructors and ensuring that the system is able to deliver the best possible instruction for every child" (p.2). They continue by emphasizing "that the quality of an education system cannot exceed the quality of its teachers" (p. 16) and "the only way to improve outcomes is to improve instruction" (p.26). Though performance on these criteria is invisible to the public, it is worthwhile considering what might be communicated based on current research.

One of the goals of NCLB has been to increase the percentage of core academic subjects taught by highly qualified teachers (U.S., 2007a). While most school districts reported NCLB's quality requirements had no impact on their ability to recruit and retain teachers (60% and 68% respectively), significant minorities (29% and 19%) stated it had reduced attraction and retention capabilities (CEP, 2007b). In North Carolina, clear evidence exists that current accountability systems have worsened low-performing schools' ability to attract and retain high quality teachers, lowering retention rates and increasing turnover in the most troubled schools with no evidence that departing teachers were replaced by individuals with better qualifications (Clotfelter, C. T., Ladd, H. L., Vigdor, J. L. & Diaz, 2004). More recently, over half of all states and districts reported that NCLB's requirements for increasing teacher qualifications had minimal or no impact on student achievement (56% and 66% respectively), while 10% of states and 28% of districts reported they had improved somewhat (CEP, 2007b). Crocco and Costigon

(2007) tracked over 200 recent education graduates in their new careers as middle school teachers in the New York public education system, finding many changed jobs multiple times in their first five years of teaching. Graduates from their education programs expressed different responses to an environment in which "successful teaching has come to be defined as faithful devotion to the prescribed coverage of mandated curriculum or dutiful replication of scripted lessons," the responses often varying as to whether the school took a "laissez-faire" or strong approach to implementation (p. 526). However, although the study's design cannot establish causality, the authors report that teachers sought out schools that allowed greater creativity in curriculum and in the design of pedagogies leading to students' meaningful achievement. At best, the effect of accountability systems on the attraction and retention of high quality teachers is ambiguous.

The impact of accountability systems on teachers and instruction has always been a core focus of CPRE researchers. Long-standing evidence indicates that teachers and principals are conscious of the standards of accountability systems (Abelmann & Elmore, 1999; Elmore, 2004; Elmore & Fuhrman, 2001; Goertz & Massell, 2005; Ladd & Zelli, 2002; O'Day, 2002; O'Day, Goertz & Floden, 1995) but whether consciousness leads to improved instruction depends on situational variables that may or may not be addressed in accountability designs (Cohen, 1996; Goertz & Duffy, 2001). Ablemann & Elmore's (1999) case studies of teachers' and schools' conceptions of accountability revealed complex relationships between teachers' personal sense of responsibility, external accountability systems, and collective expectations, with parent involvement as volunteers and fundraisers increasing the influence of collective expectations in the school's operations. Interviews with administrators and teachers at forty-eight low performing high schools in six states found little connection between a school's reported responsiveness to accountability goals and measures, and the quality of their organizational and instructional responses (Goertz & Massell, 2005). Qualitative case studies of improvement plans adopted by low-achieving schools in three states suggest that the majority of schools attempted to undertake a large number of unfocused activities; adopted external standards as short-term goals, without consideration for the gap between proposed and current performance; established "boiler-plate" philosophy

and mission statements unrelated to schools' contexts or needs; and gave little evidence of developing strategic plans for improving instruction and/or student performance (Mintrop, MacLellan & Quintero, 2001).

In examining how test-generated knowledge contributed to sustained changes in practice, O'Day et al's (1995) early investigations of accountability systems and practice-based inquiries by schools and university-school partnerships led to the recommendation that organizational capacity-building rather than individual teacher knowledge serve as the focus of performance improvement. O'Day's (2002) consistent central tenet is that reform/accountability systems can impact on educational outcomes only to the extent that they supply information relevant to decisions regarding teaching and learning. Her work within the Chicago school system, which extended over a six-year period, becomes the basis for a theoretical combination of bureaucratic and professional accountability, an intertwining which she believes might foster "the generation, flow, and use of information for organizational learning and adaptation" (p. 321). Unlike Mintrop et al, who addressed administrative responses to accountability systems, O'Day concentrates on information for teaching, laying out five conditions by which the quality of information flows might be evaluated: (a) it must be valid and accurate; (b) it must contribute to the evaluation of teaching and learning; (c) the degree of detail and frequency with which information is provided must be appropriate for its intended use; (d) it must foster organizational connections and reflection; and (e) it should contribute to the organization's ability to make meaning of the data generated and used for evaluating teaching and learning. In shifting from an external to internal orientation to accountability, her work resembles that of Newman, King and Rigdon (1997). Although the strength/weakness of the state's/district's accountability system was not a consideration in selecting the study's twenty-four schools, they found the seven schools with strong external accountabilities exhibited less organizational capacity for performance improvement, while those with strong internal accountability orientations engaged in more performance enhancing behaviours including development of school-wide performance standards for student performance; collection and review of relevant student data; development of professional norms and collaborative activities; and searches for additional professional knowledge. Whether externally driven control

systems facilitate the evolution of internally-driven commitments to student equity and achievement is one of the questions they raise. [30]

Capacity is a reoccurring theme in Elmore's work, oft illustrated by case study data describing the dilemmas facing those responding to accountability systems. By way of an example, an ambitious reading-across-the-curriculum program undertaken by enthusiastic administrators and teachers in a middle school whose students struggled upon reaching high school met with disappointing results.

> *The teachers had clearly internalized a model of teaching in which they were expected to be focused, well-organized, energetic, engaging, fast-paced, and, above all, in control. But if you took the objective of the school's focus on reading across the curriculum, it didn't align with what the teachers were actually doing in the classroom. If you took a literal transcript of the classroom discourse, it was mostly teacher talk and mostly composed of questions that could be answered by retrieving facts from texts. If you sat next to a student and watched what they were doing , what you saw was students looking at the teacher waiting to be called on, and then going to the appropriate place in the text to retrieve the fact. What the high school teachers wanted was students who could read high-level text, analyze it, have ideas about it, and articulate those ideas. What middle school instruction was doing – and doing with ruthless efficiency – was teaching students how to answer factual answers in class (2004, pp. 243-244).*

At the level of administration or teaching, the studies challenge a foundational assumption of accountability systems, which is that performance outcomes alone can or do stimulate a school to increase their instructional capacity and improve performance

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[30] In their Ontario-based study, Leithwood, Steinbach and Jantzi (2002) raise similar questions, noting "Evidence about educators' personal/professional goals indicated that because the majority of our respondents did not believe that the government's intentions for many of their accountability policies to include teaching and learning, they found little that resonated with their own professional goals" (p.111). The authors saw little possibility of deeply rooted negative attitudes to external policies evolving into the collective responsibility associated with strong schools.

outcomes.[31] They are also evidence that accountability systems fail to stimulate educational systems to engage in effective teacher development, one of the critical factors identified by Barber and Moushad.

The nature of the failure is made evident in the day-to-day and sometimes minute-by-minute activities of students and teachers documented in ethnographies of accountability systems' impacts. The two teachers at the center of Watanabe's (2007) study described differences between their personal goals for their language arts classes – personal appreciation and enjoyment of literature, communication and collaboration skills, writing "like a real writer writes" – and the modifications they felt compelled to make to prepare their seventh grade students for standardized, multiple choice and writing end-of-grade (EOG) tests. In addition to the seven days devoted to testing, Watanabe observed that during the three to four weeks devoted to EOG preparation: literature was selected for its ability to illustrate test concepts; the purpose of reading was reduced to identifying literary devices, answering inference questions, and defining vocabulary; no independent projects were undertaken; multiple choice worksheets occupied a significant portion of instructional time; little time was allowed for small group interaction; and writing activities targeted stand-alone test genres. Overall, teachers' pedagogies were less aligned with practices advocated by the National Council of Teachers of English (NCTE).

Sloan's (2007) reflections on her ethnographic case studies of Texas teachers' classroom responses to accountability-related policies simultaneously supports and contradicts Watanabe's observations. While the research subjects expressed concerns similar to those in Watanabe's study, they also exhibited significant agency in ignoring

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31 Finland, which has maintained high reading scores and moved to the top of global rankings in mathematical performance, has largely ignored Anglo-Saxon educational reform initiatives focused on standardization, literacy and numeracy, and formal accountability systems, instead accenting "…teaching and learning by encouraging schools to craft optimal learning environments and establish the educational content that would best help students to reach the general goals of schooling" (Sahlberg, 2006, p. 29). Finland's highly educated teaching workforce assign no grades, have control over curricula, and are a key voice in the design of professional development programs. Further, the education system focuses on absolute, individual success, with assessments used to track individual performance over time and to direct resources to those whose performance is lagging in relation to standards (Itkonen & Jahnukainen, 2007). While 98% of Finnish students participating in international studies are Finnish-born, a significant difference from the ethnically and linguistically diverse classrooms of Canada and the United States, their consistently high performance in international studies is a stark contrast to the outcomes achieved by American students.

mandates regarding minority children, at times to the detriment of the children in their classroom. Additional forms of unanticipated outcomes were documented by Anagnostopoulos (2003) in her work with Chicago public schools pre-NCLB. Researching the effects of the district's accountability system on teachers' responses to student failure, her case studies of English teachers in two high schools revealed practices by which low score students were isolated in separate classrooms characterized by lowered teacher expectations, less and less-complex work, and fewer educational resources. All but "a handful of teachers" (p.314) were described as disengaging from their students and assigning responsibility for student outcomes to the students themselves and/or their environments. Booher-Jennings (2005), in her case study of an impoverished urban elementary school in Texas, found teachers performing what she terms "educational triage", diverting resources to those students who appeared on the cusp of passing the Texas Assessment of Knowledge and Skills, and/or to those students whose outcomes would impact on the school's rating.

These four studies illustrate themes that emerge repeatedly in qualitative investigations of accountability systems as they have been designed and implemented within the American context. A metasynthesis of forty-nine original studies conducted in the United States examined the impact of high-stakes testing on subject matter, knowledge form, and pedagogy. All three themes appeared in the majority of studies, with the majority of studies within each theme identifying a negative impact - a contraction of subject matter, increasingly fractured presentations of knowledge, and more teacher-centered pedagogies (Au, 2007). However, high-stakes testing and the accountability systems in which they were embedded were described as having an opposite effect in a minority of studies, with social studies and language arts the frequent context for conflicting evidence, and test design an apparently critical variable.

It should be noted that "narrowing of the curriculum" was an anticipated response to the measures of accountability systems, and is not necessarily considered negative. As many have noted (see for example CEP, 2007a; Fuhrman, 2003; Herman, 2005; Ladd & Zelli, 2002; Linn, 2003), the intention of accountability systems is to focus resources on performance standards that are effectively aligned with established curricula, and increased focus may result in a perceived but beneficial narrowing of pedagogic aims.

However, this assumes that standards, not test scores, serve as the basis for decision-making, and that curricular standards are thoughtfully developed and communicated. Leaving aside the historically problematic relationship between curricula, performance standards, and test designs, the assumption that teachers will focus on standards and curricula, not on tests and measures has been consistently discounted (Herman 2005, 2007). The distortions are not a simply increased emphasis on reading and math to the detriment of other subject areas. Instructional hours are skewed across grade years, with disproportionate classroom time given to the subject which will be tested in that school year (Herman, 2007) and distortions greatest in low-performing schools (CEP, 2007a).

Quantitatively and qualitatively, the overwhelming balance of research takes the position that accountability systems as they currently operate in the United States have little positive impact on elementary and secondary education. Indeed, the unanticipated outcomes in low-performing schools are frequently negative, as indicators alone fail to stimulate activities that might improve instructional quality, and accountability systems' designs do not account for schools' lack of capacity to effectively address identified concerns. Schools respond, but they respond by attempting to raise the indicators of achievement, rather than engaging in the development activities that might improve learning.

The third point raised by Barber and Moushad is that effective educational systems deliver the best possible instruction to all children. Focusing on the absolute performance of the individual child, efforts are made to quickly identify struggling learners and divert resources to address their needs. "No Child Left Behind", theoretically, is an attempt to create an educational ethos congruent with such goals, and disaggregated data must be reported because the Act's creators hoped to focus attention on those students who have historically been ignored. For parents of minority children, those whose home language is other than English, whose ethnic background is defined as "minority" by the various acts, or whose disability is similarly defined, there is at least anecdotal evidence that requirements for disaggregated data have drawn attention to their learning needs and outcomes (Cawthorn, 2007; CEP, 2007c; Linn, 2003; McLaughlin & Rhim, 2007; McLaughlin & Thurlow, 2003). However, it remains unclear whether attention has translated into effective action. Arguably, it has not. Eighty-three percent of

states report that they are having trouble complying with NCLB requirements for special education teachers (CEP, 2007b). Despite the shift to ensuring common outcomes for all students, teacher and/or school practices for accommodating students with low English proficiency and/or hearing disabilities makes interpretations of achievement data difficult (Cawthorn, 2007). Further, although consistency has improved in the last several years, exclusion rates and exclusion criteria for those designated as an English language learner (ELL) or disabled are unclear, as is the impact of exclusion on a school's "sense of accountability" for designated students, and the real choices available to those students whose needs are not being met (McLaughlin & Rhim, 2007; Thurlow, 2004; Thurlow, Nelson, Teelucksingh & Ysseldyke, 2000). Lee and Wong's (2004) modeling of the relationship between the relative strength of state accountability systems, school resource allocations (per-pupil expenditures, class size, teacher qualifications) and mathematics achievement, found no significant improvement in the allocation of resources/equity conditions or any evidence of an impact on equity of outcomes for the period 1990 to 2001, and NAEP data for 2002 to 2005 shows no change in the achievement gap (Lee, 2006). These studies, coupled with qualitative investigations of teachers' responses to students' low performance in relation to accountability system tests, suggest the response to minority students' needs and/or the needs of students with disabilities is often the antithesis of increased instructional capacity and provision of rigorous content which Harris and Harrington identify as common thread in all successful efforts to reduce achievement gaps (2006). On the third of the three characteristics common to effective schools, ensuring success for all, students who are historically less successful in American schools are now more visible, but their educational progress has remained the same.

In relation to things that matter, [32] the research strongly suggests that formal accountability systems are not achieving their goal. On the balance, they are not contributing to improvements in the quality of instruction in America's publicly funded schools, and they are making little difference in the lives of minority children, despite their heightened visibility within administrative corridors. Those with the least vested interest, the private and non-profit organizations that have conducted national and

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[32] Latour (2005) uses the term Ding or thing to denote a "matter of concern" (p.41)

international comparisons of educational achievement, are the most unequivocal in deeming American accountability systems as a failed investment (Barber & Moushad, 2007; CEP, 2007a, 2007b, 2007c; OCED, 2007a). However, the American public receives little of this information. The accountability systems are not designed to supply citizens with knowledge that helps them assess whether the processes and systems put in place to improve educational outcomes are affecting instructional capacity.

The "Who" of Knowledge Mobilization

It is perhaps telling that Moss and Piety (2007), in summarizing the National Society for the Study of Education's (NSSE) most recent yearbook "Evidence and Decision-making", describe theirs and related literature as that which might "decenter, complement, and challenge studies of the impact of standards-based accountability" (p. 2) as it pertains to teachers, administrators and other educational professionals' use of evidence, but make no mention of the public's need for information. The American academic discourse of accountability is strangely twisted inward, the public absent from the system they fund and which their children attend. At the end of their study, O'Day et al (1995) include a paragraph on the need to inform the public about educational improvement, and reference the demise of the California Learning Assessment System (CLAS) to illustrate the consequences when improvements fail to garner general support. Elmore (2004a) points out "what policy makers and the informed public *think* (italics in original) performance-based accountability is, differs considerably from what it *actually is*" (p.275). Earlier in their research trajectory, Elmore et al (1996) state that "much of the public is ambivalent and confused about standards and related policies" (p. 89), supportive of high standards but unsure how policies and curricula relate to the basics of education. Given the confusion, it is not surprising that "In many schools and communities, the purposes and expectations behind performance-based accountability systems have been reduced to essentially a test-based form of compliance" (Elmore & Fuhrman, 2001, p. 72). So with minor hand-wringing the public is dismissed, for there is little else by way of reference to them.

Yet the history of accountability is not the history of performance systems. Accountability, historically, is public accountability, governmental accountability,

democratic accountability. The New Public Management was not intended to erase these responsibilities, but to connect the public service more directly to them, to ensure the public was efficiently and effectively served. As Powers and others protest, poorly designed systems and the selection of inappropriate indicators act in opposition to these theoretical intentions, which is certainly the case with NCLB. But it is not the politicians who have erased the public from research on educational accountability. That is an act of American education.

Outside of the U.S., the *who* of accountability is constructed differently. In England, to give but a brief example, the relation between the public, schools and teachers is a dominant theme within the research literature. Gleeson and Husbands (2003), although drawing on some of the same distinctions between professional and managerial accountability as O'Day (2002), foreground "a balance of consultation among government, professionals, and the communities they serve about the ways in which the conditions for an educated community can be established" (p.508). While mindful of the "globalized educational economy", they remain equally cognizant that the systems of accountability can exacerbate rather than ameliorate the class- and culture-based differences of opportunity that exist within societies, and that accountability as performance-to-measure forestalls discussion of the thing-being-measured. Ransom (2003), though employing a different typology of accountabilities than Mulgan, attempts a similar balancing, acknowledging the historical breakdown in the public's trust of professionals, but critiquing the English model of public accountability for eroding:

> *…any conception of the public good as collective good determined through democratic participation, contestation, and judgement in the public sphere. It seeks to replace politics (substantive rationality) with contract (technically rational) solutions. (p.470)*

Public deliberation requires public information, and here is a challenge for which education is historically unprepared. In describing the tensions experienced by school leaders in Manitoba, Ontario and England when responding to the increasing need to manage data, Earl and Fullen (2003) write:

Historically schools and LEAs/districts have been notoriously poor knowledge sharers. This has never been part of the 'habits' of school and little time or training is dedicated to knowledge sharing. (p. 392)

Like Behn (2001, 2003) and others, they see schools as a critical nexus in the mobilization of knowledge, in the transformation of data into something that can meaningfully be shared with the school and its community. There is common agreement that the deliberative models of shared responsibility require more than narrow bands of performance indicators. Yet how 'giving an account' (Ranson, 2003, p. 461) might occur, the means by which knowledge and understandings might be exchanged is never explored. Here, it becomes evident that there is another "who" problematically positioned within the broader discourse of accountability, and that is the teacher.

The connection between high quality education systems and a high quality teaching profession manifests itself in all accountability literature, most typically among CPRE researchers through the concept of capacity. Herman (2005), a director of CRESST, is unstinting in the emphasis she places on quality instruction.

While accountability is a top-down policy strategy to promote improvements in student learning, it will not work in the absence of talent and creativity at the local level. Accountability may help to improve the motivation to change, but educators must be assisted to acquire the capacity they need to increase student learning. Good teaching is an intense problem-solving endeavor: it requires sophisticated content knowledge and pedagogical finesse, including sensitivity to students' needs and motivations, to take students from where they are to where they need to be. (p. 13)

However, within the hierarchies of U.S. educational accountability systems, knowledge never flows from teachers to other educational stakeholders. Schools are terminal nodes, a Dead Sea into which information travels but from which nothing comes forth unless scrutinized, analysed and re-formed by those who study their practices. Teachers are encouraged to share knowledge amongst themselves and to develop data

analysis skills appropriate for assessing their students and the effectiveness of their instruction, but that ends the envisioned scope of their professional knowledge. Within the structure of the accountability systems and as they are positioned within the academic literature, teachers are professionals with limited professional and/or social accountability, for they give no accounts to the public.

Information and Knowledge Mobilization

In relation to this inquiry and the SSHRC grant "Alternative Accountability," the interest lies in how "literacy/ies" is assembled by educational accountability systems for communication with the general public, and the implications of these representations of meaning-making for ethnically, linguistically, and culturally diverse students. Whether or not one accepts that current American accountability systems are failing to attain their goals, it is evident that the type and quality of information provided by such systems is inadequate for the roles and responsibilities they assign parents. In addition, the systems and much of the research on their operation reduce accountability to its narrowest organizational construal, failing to acknowledge the more complex accountabilities of the larger social relations which exist amongst schools, the public, and their governments in open societies. Such systems fundamentally structure the flow of public information in a manner antithetical to practices associated with social and economic well-being in knowledge societies. The question then raised is to how accountability might be conceptualized in relation to the more complex accountabilities of public institutions and their professionals.

Indicators

Meaningful performance of public accountability requires providing the public with information useful for informed judgement, and numeric indicators, isolated from other forms of information, are neither sufficient nor appropriate for the task. In discussions at the crossroads of information systems, deliberative democracy, e-government, and public policy, finding alternative means of presenting information for public consideration is considered a central and pressing concern. Publishing data is,

quite simply, not sufficient, and Fung, Graham, and Weil (2007), in their recent multidisciplinary analysis of public transparency policies in the U.S., conclude that new ways of thinking are required:

> *We advocate beginning the design of any new system by analyzing what information users want and their decision-making habits. More broadly, we call for a new understanding of the democratic mantra of "access to information" so that it means more than simply placing data in the public domain. Instead, it means requiring the provision of content that is useful, customized, and interactive. (p.181)*

Though this call is consistent with Power's critique of audit figures and Papadopoulos' emphasis on increasing the public's evaluative competence, the rethinking of public information in the education sector nonetheless requires a significant shift in contemporary thought. Despite the repeated and demonstrated flaws in test scores, and the debatable impact of test-driven systems on the quality of American education, most American researchers of accountability systems, including researchers involved with CPRE, have unwavering faith in measurement. Measures inform; measures stimulate action; measures serve as the basis for consequences. Where measures fail to serve their intended purpose, as evidenced in numerous cases (see Baker, 2007; Elmore, Abelman & Fuhrman, 1996; Fuhrman, 2003; Goertz & Duffy, 2001; Linn, 2003; O'Day, 2002), then the problem is with the measures' design, or with the range of measures used, or with the individuals interpreting the measure. Measures as information, the concept embedded with outcome-based accountability systems, is never itself called into question.

To their credit, these researchers argue that good systems would employ multiple performance measures. They are strong supporters of further research into schools' use of measures and into developing the capacity of schools to make better use of data. Yet, there are puzzling absences and contradictions inherent in their attitudes to measures. Despite implicitly and explicitly relying on performance-as-measured when studying school performance and accountability, little actual or proposed research explores causal relationships between accountability systems and performance outcomes, or uses of

experimental and/or quasi-experimental designs for this purpose.33 Indeed, interviews with state officials find their evaluations of accountability systems rely on anecdotal evidence (CEP, 2007c). Although the New York Performance Standards Consortium has attempted to track the post-secondary acceptance rates, GPAs and completion rates of their graduates (Foote, 2007),34 no similar longitudinal studies have been conducted in any jurisdiction that has implemented performance-based accountability systems. Baker (2007), a director of CRESST, is among those who decry the far-reaching decisions reached using unproven and disconnected tests, using her Presidential Address at the 2007 Annual Meeting of the AERA to argue:

> *…the evidential disconnect between test design and learning research is no small thing. (italics in original) Think about it. It means, at worst, that tests may not actually be measuring the learning for which schools are responsible, thus gutting the basic tenet of the accountability compact. (p. 310)*

But in her wide-ranging talk, she continues to place her faith in expert-developed systems rather than professional judgment, suggesting modifications to current testing regimes to mitigate their damage while construction begins on alternative forms of educational attainment. The new becomes part of the old before it has even begun.

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[33] While Carnoy and Loeb (2002) found correlations between gains in Grade 8 students' NAEP math scores during the late 1990's and the strength of state accountability systems, associations with Grade 4 scores were much weaker and no evidence of an effect on students' progression through high school. Harris and Herrington (2006), in reviewing literature on the performance of minorities, suggests that most of the positive effects of accountability systems found in Carnoy and Loeb's study are associated with promotion/graduation exams. de Wolfe and Jannsens (2007), in their review of international literature on the effects of school inspections and public performance indicators, could not establish causality between either school inspections or circulation of public performance indicators because the research designs could not support claims of causality.

[34] The New York Public Schools Consortium is a group of twenty-eight high schools exempt from New York state testing and Regents exams. Consortium schools, which have "more students of color, more students who qualify for free or reduced-price lunch, more students receiving special education services, and more entering ninth and tenth-grade students scoring below state standard on reading and mathematics tests than the average New York City high school" (Foote 2007, p. 361) are exempt from testing requirements because of a special waiver signed in 1995. Reports for the 666 students who agreed to participate in the on-going study, and whose colleges agreed to recognize consent forms granting release of student transcripts, indicates that 77% attended four year colleges, 19% attended two-year colleges, and 4% attended vocational colleges. Average GPAs after three semesters were 2.7 for students in four year colleges and 2.2 for students in two year colleges.

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Most frustrating is that, like other researchers in CPRE and CRESST who observe, interview, record, document and communicate results in non-measured form, who provide vignettes, cases studies and stories to illustrate their points and promote understanding, the forms of knowledge which inform their judgements are rarely treated as valid forms of data/information for public decision-making. It is these alternative forms of information that offer new paths for exploration, not as replacements but as complements to the indicators, not as stand-alone data but as a means of fleshing out what is obscured in a number.

Information and Knowledge

Reimagining information for public accountability requires a sense of wonder - a wonder of the meaning-making resources children bring to school, a wonder of the meaning-making resources that may be socially and economically valued in their futures, and a wonder of the ways in which parents and other members of the general public may be informed and interact with the learning that takes place in schools. The public's interest lies not in a reductive measure of a narrowed skill. It lies in the potential that is the children in our schools - the refugee child from Sudan; the upper middle class child of two professional parents; the Cantonese-speaking child whose parents came to Canada as economic immigrants; the aboriginal child living off-reserve - a child in a farming town; a child in a mining town; a child in a high-density urban neighbourhood; a child from the sprawling suburban landscape of the Lower Mainland or Ontario's 410 beltway. While the performance of a school matters, the first matter is deliberation as to what constitutes performance, and how all students can be supported in learning. For this reason, public/social accountability must precede performance/organizational accountability in the design of systems for mobilizing knowledge about the practices of schools, the flow of knowledge between the public and educational professionals designed to support reflective, thoughtful and sometimes contentious exchanges of ideas.

In emphasizing information that users want and find useful, it is wise to consider Earl's (2001) reflections on parents' responses to information provided on schools and learning:

When parents were surveyed, there was little congruence between the content of the reports and the information that parents considered to be important for them. Metaphorically, there is a story to tell; an image to paint, and data are the colours for the painting or the words or images for the story. Getting the images right depends on the purpose and the intended audience. (p. 16)

Earl speaks of stories and images constructed from data. Stories and images, though, are data, as are children's voices, their informational writing, their reflections on learning, video of their cooperative activities, and other representations of learning and knowing. At a time when multiple and multi-mediated communicative forms have attained the status of mundane, the re-imagining of public information is not an exercise of text and figures. Neither is it an exercise in the false dichotomy of stand-alone or interactive. Information flows in many forms.

Information must also be understood within the context of its purpose, for as Ranson argues:

Trust and achievement can only emerge in a framework of public accountability that enables different accounts of public purpose and practice to be deliberated in a democratic public sphere: constituted to include difference, enable participation, voice and dissent, through to collective judgement and decision, that is in turn accountable to the public. (2003, p. 476)

The two conditions on which Ranson predicates success (for so "trust and achievement" must be understood) - "different accounts" and their public, democratic deliberation - entail the sharing of accounts/knowledge and public institutions' facilitation of the same. Here also knowledge is no simple indicator, not data-performing-as-obfuscation, not mere dissemination, but textual designs that deepen and broaden understanding, fostering the complicated messiness of democratic dissent, and affording collective judgement. Knowledge mobilization in the fullest sense is a central constituent of public

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accountability, and it is from the perspective of knowledge mobilization that public accountability will be explored in this inquiry.

CONCEPTUALIZING MULTIMODALITY FOR KNOWLEDGE MOBILIZATION

Introduction

The initial point which distinguishes this theorizing of knowledge mobilization from theories of knowledge management is its emphasis on meaning, for theories of knowledge management typically emphasize the creation, packaging and movement of knowledge, but gloss the negotiation of meaning within and across contexts. As complex meanings are primarily realized in and through language, it is thus sensible to turn to theories of language to begin this section of the inquiry. However, presuming language as the sole mode for realizing knowledge ignores communication's multimodality, the syntax of these equally important meaning systems invisible just as the complexity of language is invisible in everyday use (Herring, 2004; Kress & van Leeuwen, 1996/2006). The rapid expansion of the range of textual forms available for presenting and representing one's self and one's ideas disrupts historical alignments of theory, praxis and practice in education, with arguments regarding students' engagement with complex mixtures of visual and linguistic information continuing in schools and academia (see Cope & Kalantzis, 2000; Kress 1996, 1997, 2000a, 2000b, 2001, 2003a, 2005; Unsworth 2001, 2006). [35] However, this paper is concerned with the conceptual challenges flowing from the increasing privilege conferred on multimodal texts. If meaning-making is inherently multimodal, and if the linguistic mode, long dominant in conceptions of formal academic schooling, has been repositioned and reweighted within the larger society, then multimodality must be linked to issues of the privileged register, and the relation of students to these registers. Multimodality, then, is implicated in discussions of power, agency, and knowledge mobilization, and it is for this reason that it is explored here.

As a means of opening the discussion, the paper first establishes the theoretical relevance of social semiotics and, more particularly, Kress and van Leeuwen's visual grammar to the challenges posed by the shifting modalities of privileged texts, highlighting also the theory's capacity to address issues associated with the linguistic, ethnic and cultural diversity typical in Canadian schools. Having established the

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[35] This paper employs Hodge and Kress' (1988) definition of a text as "a structure of messages or message traces which has a socially ascribed unity." (p.6)

theoretical relevance, it then turns to attempts by contemporary researchers in the social semiotic tradition to grapple with issues of multimodality in elementary and secondary education. This includes examining the extent to which current research speaks to the rich meaning-making practices students bring to the classroom. Finally, an effort is made to identify critical issues still absent in current educational research on multimodality, particularly issues arising from the shifting affordances of digital technologies, and the representational possibilities they allow. With these three pieces addressed – the theory, the research, and the issues still to be addressed – it becomes possible to consider the place of multimodality in relation to knowledge mobilization and the meaning-making practices of school.

Education, Multimodality and Social Semiotics

The Argument for a Social Semiotic Frame

In expanding the concept of meaning-making to include the full range of modalities, one risks attempting an accounting of every mode's semantic contribution, a potentially ponderous and unilluminating analysis (Forceville, 2007). Yet many of the theoretical alternatives - focused selection and analysis of genres, media and/or culture, etc. - have little immediate relevance for educators. The larger context for theorizing meaning-making is the global space in which political and economic relations, the continuous interweaving of ideas, commerce and peoples, impact who speaks what to whom, as well as the velocity, form and range of interactions. The source of the reorderings is unambiguous: "Representation and communication are motivated by the social; its effects are outcomes of the economic and the political" (Kress, 2005, p.6). Within contexts of shifting textual mediation and modality, an orientation to meaning-making focused solely on established genre/text types or rhetorical patterns exacerbates the lags between the field of production of discourse and classrooms, the chronological distance between a genre/media's disciplinary formalization and education's attempts to mitigate against the effects of class. Further, as meaning, modes and media take on new complexities, categorizing each new media and/or modal combination as a discrete area of instruction lies beyond the possibilities of school's time limits. If the pedagogic aim is

to deepen and enrich students' and teachers' potential as meaning-makers, a guiding theoretical framework for multimodality must provide a consistent language for isolating and discussing texts' salient components, enabling description and explanation of the integration and recombination of meaning-making resources, regardless of the text's disciplinary and/or mediated form. Such a theory necessarily exists in a state of perpetual tension between a false ontological orientation to universality and an atomistic, incomprehensible individuality, inevitable when moving between a thing that is teachable and the unknowable possibilities of each person.[36] It will also, as Bogost (2006, 2007) lays out in his approach to videogame criticism, have the capacity to explore units as well as systems when systems are "the spontaneous and complex result of multitudes rather than singular and absolute holisms" (2006, p. 4). Given the differing and differentially valued disciplinary discourses associated with the modes and their forms of expression, such a theory is inherently contentious (see Forceville, 1999; Matthewman, 2004; Varpio, Spafford, Schryer & Lingard, 2007). However, good theory is open to continuous interrogation and, as will be demonstrated, the capacity of Kress and van Leeuwen's work to fruitfully address the educational challenges posed by shifting communicative affordances merits its consideration.

Social Semiotics and SFL

The theoretical backbone of Kress and van Leeuwen's framework is systemic functional linguistics (SFL) (Halliday, 2004), a relationship embodied in a shared conceptualization of language and other modalities as resources within a semiotic system (Halliday, 2004; Halliday & Matthiessen, 1999; Hodge & Kress, 1988; Kress, 1993; Kress & van Leeuwen, 1996/2006). A semiotic resource requires a content plane - meanings realized in the resource's lexis and grammar (or lexicogrammar) - and an expression plane - in language, the phonological and/or graphic realization of the lexicogrammar (Eggins, 2004; Halliday, 2004).[37] In contrast to theories more directly linked to Saussure, for whom the relationship between the sign and signed is arbitrary,

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[36] Here, again, I use "thing" as defined by Latour to indicate a matter of concern.

[37] Because no generally accepted term exists for the non-linguistic equivalent of "lexis", lexis and lexicogrammar are used throughout this paper, with recognition that such use is inappropriate.

(relatively) fixed, and dependent upon an "is not" logic, a social semiotic approach to language and to other meaning-making resources presumes an individual creates signs as the meaning they are attempting to communicate. The relations between the strata of the content plane are not fixed, nor are relations fixed between the content and expression planes. Rather, the relation between the strata is one of realization, and a selection from the system of options forming the semantic strata of the content plane is realized in the lexicogrammatical system. An individual chooses from the range of resources available to them, remaking the relationship between the signifier and signified with each communicative choice.

> *Sign-makers thus "have" a meaning, the signified, which they wish to express, and then express it through the semiotic mode(s) that make(s) available the subjectively felt, most plausible, most apt form, as the signifier. (Kress & van Leeuwen, 2006, p. 8)*

Signs need not be linguistic. A social semiotic approach inherently conceptualizes meaning-making as integrated and multimodal, a key consideration in assessing its relevance to education.

Modes are theorized as non-hierarchal sets of resources from which an individual selects to express or realize their intended meanings, and individuals are "motivated" in their communication and in their communicative choices. This does not imply that an individual's choices are unlimited. Rather, choices are constrained by context, for one's communicative activity can only be achieved with consideration for the shared social purpose of the interaction (Halliday & Hasan, 1985). Though modes are non-hierarchal, their social and historical use results to a greater or lesser degree in contextualized specializations or patterns within and between modes, realized in registers (Matthiessen, 1993; Halliday and Hasan, 1985). The role of shared understandings of context - of the social - is another important dimension of social semiotic theories, for meaning is seen as constructed in the social, and the nature of consciousness transformed by the meanings through which subsequent experiences are interpreted (Halliday & Matthiessen, 1999).

If meaning proceeds from the social, then meanings are marked by the unequal distributions of power in a society for:

Participants in positions of power can force greater efforts of interpretation, and their notion of 'maximal understanding' is therefore different from participants who do their best to produce messages that will require a minimal effort of interpretation, or from that of participants who, through lack of command of the representational system, produce messages that are harder to interpret (e.g. children, learners of a foreign language). (Kress & van Leeuwen, 2006, p. 13)

On this last point, it becomes apparent that an individual's active intent and their purposeful use of signifiers/signified are equally relevant to the reception as well as the expression of meaning (Kress 1993, 2003a). Whether meaning is conveyed between the cover of a book, with the wave of a hand, or by placing a billboard on the side of a busy road, the reader/viewer actively interprets the communication through pre-existing personal meanings, the sign now the signified. Thus the remaking of semiotic resources, regardless of their form, is involved in all aspects of meaning-making, and the effort invested in meaning's production is related to the individual's positioning within the exchange. The interplay between an individual's purposes, resources, and construal of context with the intention, resources, and construal of those with greater or lesser power, provide a useful lens through which to understand the diverse perspectives that Canadian students bring to the classroom.

To signal the theoretical shift from mono- to multimodal meaning-making – and presumably to avoid the inappropriate use of "write" or "author" when discussing multimodal texts – those working within a multimodal framework use "design" to describe the generation of a text (Cope & Kalantzis, 2000; Kress & van Leeuwen, 1996/2006, 2001; New London Group, 1996). "Design" may represent the process, the practice, and/or the plan for meaning's expression and its place within the stratal realization of meaning continues to be debated. Regardless of its place, it consistently evokes "deliberateness about choosing the modes for representation and the framing for that representation" (Kress & van Leeuwen, 2001, p.45).

As, inevitably, employing the language of linguistics to write a theory of multimodality results in criticism (not entirely unearned) from other established disciplines, each with their own well-developed discourses for representation, the

theoretical language warrants careful attention. 'Grammar' has been a particularly contentious term. Evoking images of rule-governed systems that dictate correct and incorrect usages, grammar-based systems are viewed as the antithesis of the creativity typically associated with the arts and/or non-linguistic forms of expression. However, grammars that serve as the basis for social and moral judgments of right and wrong are prescriptive grammars, and are but one conception of what "grammar" can be. Descriptive grammars, such as those drawing from SFL, are derived from accounts of patterns of semiotic resources/language in use (Eggins, 2004), and few choreographers, musicians, graphic artists or architects would argue that their work has not borrowed from and/or expanded upon a "language" or social history of meanings. Indeed, works on graphic design (Elam 2001, 2004; Samara, 2002), cartooning (McLeod, 1994, 2006), and mapping (Abrams & Hall, 2005) speak directly to visual-spatial relationships which shape meaning, often elaborating on potentials yet unarticulated within social semiotic perspectives. It is this understanding of grammar that Kress and van Leeuwen, and others who explore multimodality bring to the work of studying semiotic resource systems (see for example Baldry & Thibault, 2006; O'Halloran, 2004; O'Toole, 1994). Further, in seeking to provide a theoretical basis for a grammar of the visual, Kress and van Leeuwen consistently allow that grammars for non-linguistic modes may not have and may never achieve the regularity of linguistic grammars. Despite this, as multimodal texts become increasingly formalized and privileged in contemporary societies, failing to support learners' ability to interpret, critique and generate elaborate textual designs limits individuals' capacity as agents in their social and economic lives (Horsbøl, 2006; Knox, 2007; Kress & van Leeuwen, 1996/2006, 2001; Marsh, 2007; New London Group, 1996). Conceptualizing how such support might be provided is difficult, if not impossible, without a language or grammar for meaning's design.

Largely unarticulated, but equally important, is the pressing need for a theory of/for multimodality that can support systematic discussion of "non-Western" as well as "Western" intra- and intermodal meaning relations.[38] At least two arguments can be made

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[38] As pointed out recently in The Economist (2007, October 11), even if one puts aside that the term is " misleading and off-putting… with its echoes of colonialism, self-satisfaction and cultural supremacism", "Western" as a cultural or geographic term has become increasingly absurd given the current composition of the EU and NATO.

as to the relevance of a theory of social semiotics in this regard. First, semiotic resources have different semantic potentials or affordances; they structure meaning differently. Most frequently, this is illustrated by comparing the inherent sequencing of meaning in language with the capacity of visuals to represent spatial relations (Kress, 2003a, 2005; Kress & van Leeuwen, 2001). What is being argued here is that different social units in all their various categories – disciplines, cultures, communities – employ semiotic resources differently. Simply put, there are differences in who uses what to communicate which meanings and these differences will be distributed across and within modes. Kress and van Leeuwen (2006) have noted that students comparing Greek, Italian and Spanish media to British find far less contrasting use of left and right in pages and images. A study of Korean science textbooks determined that images did not consistently follow the given-new/left-right positioning of Kress and van Leeuwen's "Western" visual grammar; that Korean textbooks contained more inscriptions/visuals than Brazilian or North American texts (2.24/page vs. 1.88/page vs. 1.47/page, respectively); that Korean texts contained cartoons and concept maps that were absent from Brazilian and North American texts; and that Korean texts made limited use of captions and indexical references (Han & Roth, 2005). Leaving aside the historical rationale, Martinec's comparison of Japanese and English (England) procedural texts (2003) highlights multiple differences in the textual organization of the steps; the use of visuals to communicate procedural information; and the realization of the interpersonal relationship between the reader and author. Walton and Vukovic (2002) have reported differences in interpretations of graphical symbols among computer users from different cultural groups. At a very deep level of ideology, François Jullien (1995, 2000, 2004) has traced across millennia the Chinese concepts of shi and dan (bland), concepts which defy easy linguistic, visual or spatial translation. Particularly in relation to dan and its realization in scrolls and poetry, it becomes evident that the visual grammatical devices of foregrounding and backgrounding realize a semantic understanding different from that proposed by Kress and van Leeuwen's Western visual grammar. Further, elements of line require a different form of attention, including but not only the calligraphic dimensions of the characters, a concern evident in the Chinese development of mechanical and lithographic print technologies (Reed, 2004). Within the Canadian context, there is

general social acceptance (though less related practical action) that a language's disappearance also represents a loss of the cultural knowledge uniquely structured within it. However, whether in the context of language maintenance and/or heritage language education, discussions of "mode" are linked almost exclusively to the traditional categories of language use and/or issues of genre and dialect (see for example Hall, Cheng & Carlson, 2006; Hornberger, 2002; Kern & Schultz, 2005; Valdés, 2005). Knowledge realized in non-linguistic modes, whether situated in the heritage or home culture, and the educational and social implications of such distributions are largely unexplored. Ironically, language for articulating the modal distribution of meanings may be required if such meaning systems are not to be lost.

Second, a system for describing grammatical relations, in contrast to a singular reliance on icon/index/lexis, provides greater flexibility in describing how meaning is achieved, and affords the possibility of comparing culturally embedded modal systems. A diagonal becomes a grammatical relation with multiple meaning potentials across social groups; the presence or absence of foregrounding/backgrounding becomes a visual grammatical device that may or may not communicate meaning within different cultures. Changes in pitch, the direction of the change (high/low, low/high), the tonal relations – each are "grammatical devices" with meaning potentials that may be differentially deployed across cultures, whether or not they are accompanied by the linguistic mode. Within the field of language education, the complex relationship between home and additional languages is well-documented, the home language benefiting from and interfering with the development of additional languages (see overview in Gass & Selinker, 2001). Halliday (1978/2007) has pointed out that the similarity in meaning styles between current and desired languages will affect the challenges faced in acquiring a new language. In acknowledging the semiotic potential of multiple modes, it is reasonable to assume that similar educational issues of benefit and interference remain to be explored in multimodal realizations of meaning. However, such comparisons require a language for describing the meaning relations/structures of grammars that is not restricted to defining signs.

Again, the primary concern of this paper is pedagogy. Good pedagogy requires concepts that are sufficiently stable to be taught, but rich in their possibilities for

creativity and analysis. The construct of media, and the focus on a particular medium (e.g. video, photography, virtual environments) or media distribution systems (e.g., television, mobile cellular devices), each of these categories arbitrary and contestable, are highly relevant within particular disciplinary and theoretical contexts. However, for the purposes of apprenticing students as meaning-makers in highly diverse societies, these theoretical constructs, because of their inability to bring an integrative coherence to meaning-making, lack the capacity to act as foundations for strong pedagogies. The mediated combinations and recombinations of modes and affordances constantly shift and multiply, evolving within a history of contextualized semantic understandings, and contemporary social, political and economic pressures. The media forms which students encounter upon completing their education, the ordering of privileged texts, are unlikely to be identical to current configurations. Though the grammars associated with social semiotic theories of multimodality will necessarily evolve, modes and grammars transcend the temporal privileging of individual media and texts, providing stable tools for description, comparison and analysis. Simultaneously, they open possibilities for examining the systematic multimodal realization of meaning across cultural contexts, for understanding what can be said by whom, and for making informed choices in placing one's message. Social semiotic theories of multimodality place the "stuff" of reasoning, responding, experiencing, and meaning at the center of study and pedagogy, facilitating the resourcing of students as future meaning-makers as well as readers of historically-mediated texts. The simultaneous possibility of stability and change, a constant of the social sphere, is integral to the theory. A social semiotic theory of multimodality is not simple, but it is integrated, flexible and, by all appearances, teachable.

Multimodality and a Visual Grammar

A brief overview of Kress and van Leeuwen's grammar will serve to connect theory to empirical classroom research on multimodality, but also to identify potentially problematic gaps in its current conceptualization and application. Kress and van Leeuwen describe their visual grammar as:

...a quite general grammar of contemporary visual design in 'Western' cultures, an account of the explicit and implicit knowledge and practices around a resource, consisting of the elements and rules underlying a culture-specific form of visual communication. (2006, p. 3)

It shares with SFL a description of meaning from which emerge three metafunctions: ideational, interpersonal and textual. The metafunctions are not arbitrary categories, but rather the very things that language and other semiotic resources are designed to do, the basis for which semiotic systems have evolved (Eggins, 2004; Halliday, 2004). Thus, semiotic systems, particularly language but also semiotic resources which have evolved stratal relationships, share an ability to construe experience (ideational metafunction), to enact interpersonal relations (interpersonal metafunction), and to create contextual relevance (textual metafunction) (Halliday, 2004; Halliday & Matthiessen, 1999).

All three metafunctions are co-present in any given text, each through their own set of elements. However, because the modes differ in their meaning potential, the elements through which meaning is realized are not identical. For example, visuals afford the semantic potential to realize participants' roles as "Interactors", a simultaneous realization of the relationship between two or more participants, which is not possible within language's linearity. In contrast, for participant roles such as "Sayer", one who says or thinks by means of quotes, reported speech or thought bubbles, realization is possible in multiple modes. Comparisons of visual Classification and Analytical structures and linguistic Intensive and Attributive clauses emphasize the variety and range with which visuals can be employed to depict Possessive Attributes. For example, a series of side-by-side images depicting several biomes can communicate the basis for classification at a level of detail that even an extended text will struggle to replicate (ex. "Tundra has…"). A table or chart reveals how the classifications are organized more efficiently than a series of linguistic definitions (ex. "Tundra is…"), which must rely on nominalization and the complex nominal phrases to realize comparable meaning. A visual sequential analytical process such as a time series of plate tectonics and continental drift can be contrasted to a linguistic analysis of the same process (ex. "The theory of plate tectonics states that the Earth's uppermost layer is fragmented into a dozen or more

large and small plates that are moving relative to one another as they ride atop hotter, more mobile material." (Kious & Tilling, 2009)). Likewise, within the interpersonal metafunction, the categories of Demand and Offer are available in multiple modes; however, the many angles at which the viewer may be positioned in relation to the image's participants afford a unique potential for nuancing the communication of power relations (Halliday, 2004; Kress & van Leeuwen, 1996/2006). The visual grammar systematically classifies visual affordances into elements such as these, describing the meanings which can be realized through the visual mode. Because the classification system shares a common theorization of semiotic systems' metafunctions with SFL, it enables discussions of how meaning may be realized across and within modes.

The grammar is not written as a pedagogic grammar, certainly not as a prescriptive grammar with a list of rules to be incorporated into the processes and procedures of the formal curricula. Although in much of his writing Kress strongly argues for greater attention to the multimodal in classroom meaning-making, Kress and van Leeuwen's visual grammar is written as a separate and distinct project, with no claim made as to its relevance to pedagogy. Rather, it is an academic text, capable of supporting the types of critical analyses that characterize Kress' and van Leeuwen's work in discourse analysis and social semiotics. Yet, given the possibilities such a grammar offers for engaging students in the examination and production of texts, it is impossible to believe that the authors have not imagined such applications. Though its current limitations will become apparent, the grammar is a place from which one could begin talks with students regarding the visual and the multimodal.

Multimodality in Education

In accepting the relevance of social semiotic theories of multimodality to education, including the relevance of its assertion that the realization of meaning within and across modes reflects current and historical distributions of power as well as modes' semiotic affordances, there remain very pragmatic questions – How can such theories inform practice? What needs to be researched? What might be taught? Nearly ten years after Kress' challenge, research on content-based second language education suggests the linguistic mode continues to dominate the field's pedagogic and research focus, and that

other modes are introduced to the analysis only when they are seen as supporting language development and/or teaching (see for example Arkoudis, 2005; Barwell, 2005a, 2005b; Bhattachary et. al, 2007; Creese, 2005; Davison, 2005; Gibbons, 2003, 2006; Mohan & Slater, 2005, 2006; Schleppegrell, 2004; Schleppegrell et al, 2004; Schleppegrell & de Oliveira, 2006; Stoller, 2004). Language is taught, other modes serve language, and the place of meaning within these studies is complicated by the multiple theories of language from which researchers work. Within the larger field of education, a broader perspective of meaning-making is taking hold; however, while Kress (2005) continues to argue that "…our theories come from the era dominated by notions of conventions and competence, whereas we need theories apt for an era of radical instability" (p.20), addressing instability is not easy. Nor is it easy to frame related issues for research if specific media or rhetorical forms are not the organizing principles.[39] In struggling to bring a theory of multimodality to the classroom, research to-date appears to fall, more or less precisely, into two general categories: a) multimodal analyses of classroom texts or b) children's multimodal practices.

Multimodal Analyses of Classrooms and Classroom Texts

Given the extensive existing research on scientific discourse (Halliday & Martin, 1993; Lemke, 1990; Wells 1999, 2000) and the particular pertinence of the visual and material to scientific study, it is perhaps not surprising that multimodal studies of classroom texts initially centered on this discipline. Within science education, the visual representation of concepts and the selection of visuals for scaffolding learning, particularly the contribution of different forms of visual representation to concept formation are an increasing focus (Cook, 2006; Dimopoulos, Koulaidis & Sklaveniti, 2003; Han & Roth, 2006; Roth & McGinn, 1998). Broadening the analytical scope from the visual to the multimodal, Kress et al observed lessons in four science classrooms in England, representing Years 7 to 10 (Jewitt, Kress, Ogburn & Tsatsarelis, 2001; Kress, Jewitt, Ogborn & Tsatsarelis, 2001; Kress, 2003b). The researchers considered how modes interacted to systematically realize the lesson content; how the organization of

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[39] Rhetoric is used in the traditional sense of the word in this paper, not as defined by Kress et al (2001).

visual schematics such as concept maps fundamentally altered the meaning of the content area subject; how visuals abstracted and simplified more complex linguistic representations; and how gesture added to the dynamic of the processes being studied, often aiding in the integration of meanings presented in the linguistic and visual modes. They highlight how traditional linguistic genres cannot fully account for the meaning communicated in students' multimodal texts; likewise, visual grammars are equally unable to account for what are loosely labelled 'generic mixes' and "ensembles of modes." The students' realizations of grounded reality and abstraction, each a form of knowledge that characterizes scientific work, require "readings" of the intra- and intermodal relations for their meaning to be fully communicated. Their analysis gives credence to Knain's claim that "…considering students' texts as multimodal is important for helping them to establish meaningful knowledge in the dynamic interplay between different authenticities" (2006, p. 659).

Later research in high school English classrooms explores the factors which constitute the sign of subject "English" – the spatial arrangements of the classroom; the posters and student work that have been selected for display; the physical positions and movements of the teacher (Jewitt 2002, 2005a; Kress, Jewitt, Bourne, Franks, Hardcastle, Jones & Reid, 2005). Traditional subject English practices of character analysis and print text annotation are analysed multimodally to demonstrate how students are taught to conceptualize such practices, to assess the relevance of non-school knowledge to literary interpretation, and to position themselves within such engagement. In contrast to the science classrooms, which showed similarities in the deployment of modalities in the realization of meaning, the English classrooms are described as more eclectic. In one, the literary entity of "character" is alternately embodied - instantiated through voice, gesture and movement –and then explored in discussion and close text reading for evidence of motivation and feeling, such efforts directed at the requirements of the English National Curriculum and targets for basic attainment. In a second classroom, character is a vehicle for exploring larger themes and social meanings, and discussions leave greater space for consideration of the text's relation to students' lives. In this classroom, character is discussed and embodied vis-à-vis a plot graph before being viewed in film, explored in small and whole class discussions, and then written into a "formal" realization. In a third

classroom, speech, gaze, gesture and posture interplay with a simple visual to shape a debate arising from the behaviour of a short story character, developing a gender frame that fits with the English National Curriculum's conception of a personal response essay (Bourne & Jewitt, 2003). The complex role of multimodality in instantiating subject English becomes particularly apparent in Bhattachary et al's (2007) cross-national case studies, in which the colonial past of subject English and of the English language intersect with student agency, teacher identity and national economic aspirations to yield diverse and highly situated practices.

With justification, Kress et al (2005) point to the strengths of their methodology, how it reveals classrooms as rich, multimodal "texts." In regards to subject area English, they write of "revealing aspects of English both crucial and central and yet never spoken; it is an entirely different approach to how, by what means, in what meanings, the subject is realized" (p. 169). Beyond proof of methodology, the key contribution of such studies is what they reveal about existing practices, and the increased possibilities for reflection on meaning's construction. Yet, they do not address issues that arise from the reweighting of modalities in privileged texts, from remediation's impact on meaning's realization, or from the differential impact of such shifts on students from diverse social, linguistic and cultural backgrounds. Nor is it evident in these studies that teachers or students have consciously evaluated, selected and/or designed the modalities through which they communicate, which Kress et al (2001) acknowledge. Perhaps the expressed need for assessments that capture and value multimodal texts is an indirect push for changes in practice. However, within the scope of this research frame, the analytic tools of the visual and/or multimodal grammars remain in the hands of the researchers, any discussion of the possibilities they offer students for interpreting, critiquing and generating texts still unexplored.

Children's Multimodal Practices

Studies of a smaller unit of meaning, a child or a small group of children, are more frequently framed to illuminate the representational choices involved in design, though, intriguingly, the research subject is often a younger child when the learner becomes the study's focus. Analysis of children's evolving representations of their social

world, and their intentional selection of apt symbols are central to Kress' illustration of motivation in the selection of signs (Kress, 2003a, 2005). Such work demonstrates how the child's meaning-making is inherently multimodal, the body engaged in the physical process of material manipulation and production, meaning encoded in the gestures of creation as well as the visual sign (Kress 1997, 2000a; Kenner, 2003, 2004; Kenner & Kress, 2003). Multilingual children's attention to the directionality and spatial framing of signs' production and interpretation, evidenced in their engagement with writing systems, further supports the claim that children draw on a wide range of semiotic resources in choosing their representations of meaning. Students' conceptualization and categorization of the technologies in their lives is represented in students' mind maps, in their conscious use of size, spacing and positioning to communicate meaning (Mavers, 2003). Jewitt's study of two seven year olds engaged in creating a computer game (2003a) is one of the richest analyses of technology-mediated practices. The students' changing conceptions of mathematical properties are evident in their design choices as they move from page to screen. In other studies, resources are remade and resignified - drawings and audio remediated into short animations (Burn & Parker, 2003); cartoon characters remade into personal collector's cards, and physical tableaus into photos (Pahl, 2003); physical scraps and gatherings remade into dolls which will later be remade into plays and stories (Stein, 2003). In each case, as children work across modes, meaning is reworked at multiple strata. The modes present to the child not as neutral resources, but enmeshed in signs, social and cultural construals of meaning. Each sign adds to the child's understandings. When the child recreates their understanding as a new sign, they draw also on their increased comprehension of modes' affordances and the meaning potential of the stratal relations. In focusing on the child rather than the text, such studies demonstrate how the child arrives in the classroom already resourced, as a meaning-maker with capacities that can contribute to their academic achievement. As Stein (2003) concludes in her discussion of children's doll-making:

> *When given the chance to create their own objects at home, they drew on*
> *people close to them who had knowledge of such practices (doll-making)*
> *and who assisted them in the making. It seems clear that through this*
> *assertion of identity, cultural practices and community, these children are*

showing their teachers that home environments need to be more valued for their potential to speak back to the school, and that through such synergies, important forms of learning and teaching can take place. (p.137)

"Speaking back", though, is not a simple matter, as van Leeuwen (2000) shows in his analysis of children's responses to a museum exhibit. Although taking great pains to emphasize the lack of context for his analysis, he does demonstrate that there are telling differences in the meanings in children's work, their written and visual responses to prompts provided by the museum. The children's decisions on whether to make themselves or the exhibit central to the account, the differences in the relative ease with which students realize the generic structure of "objective description", and the extent to which students represent themselves and/or other students as agents in relation to the many exhibits – all vary significantly between students from schools serving three very different socioeconomic neighbourhoods. Students may bring rich meaning-making resources to the classroom, but whether the children understand themselves as resourced, whether they understand the potential of the resources in relation to school, and whether schools facilitate students' use of their resources in support of their academic success are three distinct and significant issues.[40] Although focusing on assessment, the same points are evident in a study by Newfield, Andrew, Stein and Maungedso (2003) of the Tebuwa Cloth, as the students' existing multimodal capacities were not evident until an "infrastructure" was created that facilitated their application to new tasks.

These, then, are the challenges and issues which remain unaddressed when the focus shifts to children as multimodal meaning-makers. It quickly becomes apparent that children are multimodal, that language is but one of the semiotic resources that develop over an individual's lifetime, and that children come to school resourced. At every age, children's texts are complicated realizations of meaning, reflecting the representational choices that children have made within and across modes. In their thoughtful reflections, consistent with social semiotic theory, children in and out of school explain the

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[40] During the first year that I researched in her classroom, MJ Moran repeatedly emphasized the difference between these first two points, and I owe her a debt of gratitude for her persistence in response to my ceaseless questioning.

motivations behind their choices. But there are other, less fortunate parallels to language. It is equally evident that the resources and skills that children bring to school are differentially privileged. Studies of children's multimodal meaning-making enrich our understanding of what children can do, but leave unanswered how children can be supported in drawing on their resources to further their academic success. What we see in the children's choices are the meanings which they determine to be relevant. Remaining hidden from view are the resources of which they remain unaware, deem irrelevant, or have been unable to capitalize upon. The monolingualism of the texts produced by these highly diverse students is but one piece of evidence as to what remains beneath the surface. In these multimodal analyses of children's meaning-making, the challenges remain the same as those discussed by Heath (1996), the translation of understandings gained from rich ethnographic studies into theoretically resilient and pragmatically productive pedagogies.

<center>Absences</center>

Young theories warrant the same generosity of spirit as provided young children - their potential nurtured, their failings gently chided. In this spirit, the yet-to-be-developed requires exploration, for potential can only be achieved if such absences receive attention. The opening argument for a social semiotic approach to multimodality within education rested on several premises: the affordances of related grammars in supporting students' interpretation, critique and design of multimodal texts; its ability to transcend shifting media and mediated forms; the theory's affordances for articulating and comparing culturally-embedded grammars; and its capacity for describing and explaining acts of individual agency, and the differential privileging of texts which evolves from the social distribution of power. As the research in education has shown, most efforts to-date have been directed toward this last point. What follows, then, is a brief description of the absences, in regards to which much work remains to be done.

Pedagogy

One of the strongest arguments for a social semiotics approach to multimodality in education is the possibilities it offers for resourcing future meaning-makers, its integrative potential as well as its capacity to transcend the temporality of ever-evolving media/textual forms. At least four practitioner books published by The Open University explicitly draw upon SFL and Kress and van Leeuwen's theories of multimodality (Goodman & O'Halloran, 2006; Maybin & Swann, 2006; Unsworth 2001, 2006, in press) - although only one extends the topic beyond subject area English – and Newfield and Stein (2000) have described the integration of multiliteracies/multimodality into a university Masters program. Refereed journal articles by teachers who have written about their expanding practices cite Kress' and Kress and van Leeuwen's work on multimodality as influences (see Albers, 2006; Cowan & Albers, 2006; McGinnis, 2007 for examples). However, unlike research in Australia, where the continued theoretical development of SFL was and continues to be accompanied by research of its classroom applications (see Derewianka, 1990, 1998; Halliday & Martin, 1993; Hasan & Williams [Eds.], 1996; Williams, 2000), research on the use of visual grammars or their multimodal counterparts in curriculum/classroom practice is strikingly absent. Certainly such use has its proponents, Unsworth being among the most ardent. But the absence of research creates a dilemma, for without evidence that teachers and students find it beneficial to engage with such grammars, it will be difficult to sustain arguments for a social semiotic approach to multimodality in education. Yet without "grammars", principles for interpretation and creation of multimodal texts, it becomes virtually impossible to engage in the explicit instruction promoted by Kress, Unsworth and others engaged in researching multimodality. Writing on language and literacy education, Williams (2000) has argued:

> *Language curricula have remained relatively under-theorized and static while other features of school work have made some, if faltering progress towards developing children's meta-awareness about learning and interpretative strategies...It is important that other possibilities for*

developing meta-awareness through literacy pedagogy are imagined and researched vigorously, to expand a sense of how children might think about meaning-making in literary texts and, of course, other registers equally. (p. 127)

The increasing range and complexity of textual forms amplifies the need for empirical assessments of pedagogies grounded in the expanding possibilities of multimodal grammars, work that can support or disprove their application beyond analytical tools. It is not enough to research modes as they have been drawn upon in classrooms. Research is needed on what multimodal pedagogies might realize, particularly what may be afforded by engaging students in discussions of the concepts and/or grammars being enacted.

Technology

Although digital technologies are not absent from educational research on multimodality, longstanding classroom materials – paper, pencils, crayons, classroom dialogue – dominate studies of classroom texts and of students as multimodal meaning-makers. While at a theoretical level, the same researchers engage with the literal and metaphorical notion of screen, generating a sign for the shifts in privileged texts (Jewitt, 2002, 2005b; Jewitt & Triggs, 2006; Kress, 2006), the manner in which screen-based technologies are understood in their educational research is very preliminary. The educational CD-ROMs central to these analyses give all appearance of "books on screen", transference of one media practice (book/VHS supplement) to a new media with limited redesign or consideration of the new media's affordances. Though analysis of these texts' multimodal realizations of meaning is further evidence of the methodologies' strengths, the images, degree of interactivity (or lack of), and spatial and hyperlink arrangements suggest these CD's are limited as exemplars of "new" textual forms. The sole example of students' digital authorship is confined to word-processing and to use of Word Art, and the resulting documents (with the name of the school erased with liquid white-out) would not have looked out of place in the 1960's or 1970's. Only the lexical/indexical references to the internet and desktop computers move the work forward

a decade. If the visual has increasing power, and if digital texts are among those increasingly privileged, this research raises grave concerns regarding the texts to which students are given access.

Even when the "text", the object of study, is less dated, the critical importance of apprenticing students as designers of privileged texts is sometimes explicitly discounted. Pelletier (2005), in her multimodal analysis of computer games in literacy and media education concludes:

> *The value of using games in English and Media studies classrooms is not primarily to motivate particular students to be more engaged with literacy learning but to develop understanding of the kinds of texts which shape students' lives. (p.58)*

In other words, the purpose of bringing the digital to the classroom is primarily to help the researcher understand the text, not to benefit students. Pelletier does speak of the possibility and desirability of intervening in students' interpretation of games. But embedded in her conclusion is a presumption of what games are, and a perpetuation of what Jenkins (2002) has described as the academy's attempts to assert its right to sanction interpretations of fan and popular culture.

There is no ambiguity here as to the conferring of privilege. Perhaps this is the one area in which more than "gentle chiding" is required. Although Marsh (2007) refers to Kress' work only incidentally (and makes rather unfortunate use of the term Web 2.0[41]), she does draw on Bernstein's recontextualizing rules to illustrate how work by those such as Kress can be selectively recontextualized into "old" pedagogic practices "dissipating its potential to transform literacy pedagogies for a multimodal, multiliterate world" (p. 279). The theory-praxis-practice relationship within multimodal research on digital texts is troublesome.

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41 "Web 2.0" is a term coined by an independent consultant specializing in on-line marketing, initially used to promote a commercial conference on diversifying corporate marketing efforts. Tim Berners-Lee, who was intimately involved in the creation of the web and developed http and html, has pointed out that there is no substantive difference between the initial vision and affordances of the Web and the affordances represented by the commercial term "Web 2.0" (The Economist, March 8, 2007).

There is, of course, substantial research within education on use of internet and communication technologies' (ICT) and computer-mediated communication (CMC); however, very little attends to the ways in which meaning is realized within these texts and/or their modal construction. To the extent that it is referenced, Kress' and/or van Leeuwen's work is little more than a general citation, with little of social semiotics informing the work. Hull and Nelson's multimodal analysis of a young man's computer-generated video (2005) pays significant tribute to the New London Group and Kress, but the theorization of the relationship between thought and emotion, and of text/context relations bear little resemblance to social semiotics. Burnett, Dickinson, Myers and Merchant (2006) draw on Kress and van Leeuwen to identify the design features of collaboratively produced PowerPoints, co-authored by students at two schools for incoming student teachers, and to note how children's attention to design features changed over the course of the authoring process. The range of semiotic resources and skills which children bring to the task is readily apparent, partly through the sense of context students express in their comments on technology use; however, the focus of the study is on the students' digital practices broadly construed, not the semiotic choices involved in meaning's realization. Erstad, Gilje and de Lange (2007) draw upon Kress and van Leeuwen (but not the visual grammar) to discuss the reuse of semiotic resources by high schools students in their media designs. They demonstrate how teachers and students are unable to discuss the conceptualization or analysis of this form of semiotic work because of the lack of "adjectives or terms to argue" (p. 194) for/against the re-mixing choices. Burn and Parker (2003), one of the few whose work is squarely positioned within a social semiotic frame, employ a variety of cinematic concepts to describe the ideational, interpersonal and textual components of the students' work, finding that the visual grammar as currently outlined cannot sufficiently account for video's affordances. It is not surprising, then, to find Matthewman and the teachers with whom he worked "speaking back" at theory, as they attempt to implement the New London Group's pedagogy and conception of multimodality. The author, writing with the participating teachers, points out that "any use of computer technology for research, reading, and meaning-making forces a consideration of multimodality" but that:

...in order to raise levels of understanding about multimodal design we need to focus more specifically on how to develop a metalanguage of multimodality which is accessible and useable for teachers and pupils. (2004, p. 171)

Thus, the absence of research into digital texts leads back to the issue raised in the discussion of multimodal pedagogies, namely the need for language that enables multimodality and multimodal constructions to be explicitly taught rather than implicitly experienced. The absence of metalanguage again arises as a barrier to effectively conceptualizing the theory-praxis-practice relations.

Grammar

If the need for a metalanguage has been accurately identified – and the repeated calls for such from a diverse set of researchers and educators would suggest that it has – then there are additional challenges in conceptualizing the issues raised by the increasing multimodality of texts. Not the least is the difficulty posed in identifying the limits of the visual grammar as currently articulated. Kress and van Leeuwen are among the first to problematize their work on a visual grammar, to see it as a theoretical beginning rather than a polished final product. Further, no assertion is made as to the possibility of its extension beyond the visual mode, although Kress' educational research presents analyses that encompass more than the visual and linguistic. Yet it is a multimodal grammar that is being called for.

It is beyond the scope of this paper to attempt an analysis that could extend the theoretical tenets of Kress and van Leeuwen's visual grammar. What it can do, however, is touch upon issues as they have surfaced in the existing literature on multimodality in education, and support the analyses with research from a broad base of disciplines, all struggling with the impact of the increasing multimodality of texts. Where appropriate, work from a social semiotic perspective is woven into the fabric of the analysis, pointing to possibilities not yet integrated into an accessible and usable metalanguage of multimodality. The grammatical absences are loosely organized into three categories - material, spatial, and interactive/temporal – recognizing that these categories are highly

arbitrary, each bleeding into the other, and may have limited value beyond facilitating organization of this section.

Materials and Stratal Relations

Everything has the potential to mean, but not all things/meanings are organized into systems or grammars. Grammars offer the advantage of distinguishing between systemized and idiosyncratic meanings, an asset in establishing pedagogic priorities, and an application of the visual grammar that is not difficult to imagine. However, this advantage depends on a system's descriptive clarity, including its description of stratal relations. In this respect, it is less obvious how the grammar's expansion might proceed. Kress and van Leeuwen (2001) suggest that a 'grammaticalized' mode can be distinguished in part by its ability to produce meta-signs and theoretical statements (p.113). Yet, no sooner do they begin to develop this argument, with several important caveats, than the proposition itself falls into question. In no small part, this occurs because the stratal relations between the lexicogrammar and the expression plane are not always easily distinguished. Although the New London Group (1996) describes five modes - linguistic, aural, spatial, visual and gestural – it is possible to raise significant questions as to the modal classifications within any realization, the most obvious being whether writing or speech are purely linguistic and/or whether the non-linguistic dimensions (sound, material forms) are sufficiently systematized within any "user" group so as to constitute a separate grammar[42]. If multimodality is inherent in all communication, questions arise as to whether any mode, but particularly one which is non-linguistic, can independently produce metasigns and/or theoretical statements. In such ways, multimodal grammars unsettle current understandings of stratal relations, fundamental to social semiotics, leaving unresolved the basis by which a mode may be determined to be grammaticalized and requiring further refinement of their theorization.

Digitalization further problematizes the expression plane, going beyond complications associated with modes and/or their stratal relations. Sassen (2001), in a collection of papers on architecture, writes that:

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[42] See Lim (2004) for discussion of challenges presented by the Chinese writing system.

...the tendency is to conceive of the digital as simply and exclusively digital, and the non-digital, whether represented in terms of the material or the actual (both conceptions are equally problematic), as simply and exclusively that, non-digital. These either/or categorizations filter out alternative conceptualizations, thereby precluding a more complex reading of the impact of digitalization on material and placebound conditions. (p.45)

Juxtapositioning these comments against O'Toole's social semiotic analysis of sculpture and architecture (1994), which classifies material and material qualities, texture, and finish as elements, and against Kress' own comments on materials (2000c, p. 191), leads to questions regarding digitalized representations, whether they carry forward meanings realized in material grammatical elements, or whether the transmediation to digital form neutralizes the material's communicative power. Further, can objects lacking a material "reality" employ the grammatical elements of material form and/or is the realization of meaning impacted by the manner that such realizations do or do not reference a reality beyond the screen? If a relationship to an existence beyond the screen influences how a non-linguistic text is construed, have grammatical systems evolved that can signify borrowings, material or otherwise, of non-linguistic modalities? The increasing possibilities of the digital to seamlessly create, recreate, reproduce, and modify the visual, whether or not the image began through a camera's lens or on an artist's palette, challenge the materiality and time/place meaning relations of an object and its representation:

Digital images fundamentally alter not only meaning but materiality; images become defined by the layers of artifice that have been placed in them. Reference then becomes a function of the interior organization and function of the photograph, the traces of what has been done to it and the manner in which those traces are interpreted. (Burnett, 2004, p. 28)

The visual grammar implicitly and explicitly acknowledges an image's dual construction by author and viewer, but signification of referential relations, which

necessarily but not only raise questions regarding the stratal relations of material elements, are ambiguous. These questions might appear unnecessarily esoteric, beyond the immediate needs of the classroom, until one reconsiders the challenges faced by Erstad et al's (2007) media students, and the need for a metalanguage for the remixing practices exemplified in many digital texts. The visual grammar as it is currently constituted seems to offer no mechanisms for analyzing reuse and re-representation, no equivalent of the linguistic mode's capacity for quoted, cited or reported speech. The observed behaviours of Erstad et al's research subjects suggests that the meaning practice has achieved some form of general understanding or regularity, but that no language exists that allows these understandings to be talked in educational contexts. The need for such language further challenges Kress and van Leeuwen's premise that grammaticized modes can be identified by their capacity to generate meta-signs and theoretical propositions without the support of additional modes, while supporting the need for an articulation of the grammatical relations that are understood to exist.

Space, Place and Context

In extending the notion of text to modalities beyond language, the perennial issue of the relationship between text and context is inevitably reignited. Again, the material and digital spheres require consideration. In multimodal analyses of classrooms and classroom texts, whether within the discipline of English or Science, the visual, spatial, gestural and linguistic were often described as occurring within a single text, such analyses demonstrating the integrative power of social semiotic approaches to multimodality. The expressive range of these analyses, which broaden to include the physical arrangements of the classroom, provoke the critical reader to wonder how far the analytical frame of a single text can be extended, when a discussion of multiple texts occurring within and across time might be more appropriate, and how distinctions are made between in-text and out-of-text elements. Context is largely unarticulated in these studies, despite its integral importance in understanding how institutional power weighs on the realization of meaning.

In her book "Brandscapes," Klingmann (2007) analyzes the impact of the so-called experiential economy on architectural and landscape design, and the integrative

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capacities of engineers, designers and advertising specialists in the creation of a range of experiences from the Nike brand to Disney cruise ships to Starbucks. Although the concept of experience and multimodal text are not identical (although the similarities between the three metafunctions and Klingmann's analysis are uncanny), the designed experiences are intended meanings distributed across massively differentiated expressive planes, requiring defining attributes which separate the brand from mere commodity. As the practice of design expands to consciously employ a vast and complex array of semiotic resources which immerse and engage the "reader" interactively, the theoretical vantage point of context is even more critical, as the edges of the text are less and less intuitive. To go beyond the text, to construe the context and purpose for which is was crafted, is a necessary and required academic skill. In acknowledging the inherent multimodality of meaning, a theory which may serve educational practice cannot lose sight of the exterior relations.

It should be noted that context/text dilemma is not limited to commercial texts. Academics in fields as diverse as architecture and information sciences are intrigued by the possibility of place-dependent texts, GPS-enabled systems (global positioning systems) that transmit audio, visual and/or linguistic texts based on an individual's current physical location.[43] In addition, screen-based technologies allow users to upload texts relevant to their current location. Texts are evoked and selected by place-based references, which may also exist as digitally-encoded, invisible texts. The reading context is inseparable from the text, is read with the text, and necessitates consideration of intertextual and text/context relations.

Here arises, again, the implications of the digital, the place/text relations which social semiotic theories of multimodality have only begun to touch. Digital communication does not forego place but shifts how we communicate and enact our understandings of it; internet users have employed metaphors of place since the early inception of the Web (see Baym 1998; Jones 1997, 1999; Nelson 1982/1999). Sassen (2001) illustrates the challenges of theorizing digital place by posing questions regarding the complex sets of meaning relations constructed within and evoked by corporate

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[43] See Gay & Hembrooke (2004) and Mitchell (2005) for examples of two very different disciplinary discussions of place-based texts.

intranets. A separate set of issues arises in regards to the increasingly immersive designs of digitalized environments, particularly but not only games. Consider the multimodal meaning-making processes required to engage with games as they are articulated by Bogost (2006):

> *...the nature of the game's embedded system is not as telegraphic as a natural language or even a social custom. Instead, games create complex relations between the player, the work, and the world via unit operations that simultaneously embed material, functional, and discursive modes of representation. (p. 105)*

To the extent that social semiotic theories of multimodality have grappled with related issues, one could turn either to discussions of architecture by O'Toole (1994, 2004), of the semiotic affordances of hyperlinks (Lemke, 2002), or of the systemic relations of visuals and texts (Martinec and Salway, 2005). Each has potential to increase the robustness of Kress and van Leeuwen's visual grammar in relation to issues of place and space, extending the potential of their language of design to the third dimension. As of yet, however, the potential duality of physical and digital spaces as text and context, and the impact of their construal on their ordering as experience remains relatively unexplored.[44]

Interactivity, Time and Duration

If place and space lead to questions regarding intertextuality and text/context relations, then interactivity leads to questions regarding textual cohesion and the individual's position within the text. Of course, analyzing interactivity as a category distinct from space and place is an academic's game, and while the digital may be the catalyst for current discussions of user-generated content and participatory cultures, the traditional pedagogic distinction between written and oral texts has never been an entirely satisfactory means of addressing multiple authorship. Still, with accelerating societal

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[44] The emphasis here is on relatively. The digital page is increasingly an object of study by those working within a social semiotic tradition (see for example Royce & Bowcher, 2007). However, immersive digital texts have not yet been a central focus of those working within social semiotic traditions.

demand for at least the semblance of voice/agency, the array of interactive textual forms has been expanding in an iterative relationship with demand. Goodman and O'Halloran's book provides a pedagogically useful hierarchy of interactivity (2006, p. 310-311), although perhaps it is somewhat reductive for other analytical purposes. Museum installations provide exemplars of evolving forms in the material world, with artists affording interactive possibilities ranging from embodied interaction to material transformation of the installation's message (see Barry & Kimbell, 2005; Jaffrennou & Codys, 2005; Mauz & Gravelle, 2005).

But the materiality of such "texts" provides multimodal cues that are often unavailable on-line, where communication is further complicated by their temporal structures. Broadly speaking, on-line communication is classified as either synchronous (occurring in real-time) or asynchronous (initiated or responded to at different times). The temporal structure affects the availability of immediate feedback, the time available to compose and rewrite communications, the number of people who can or may be available to interact with, and the meanings or interpretations of some verbal/non-verbal cues such as pauses, word stress and intonation (Baym, 1998; Herring, 1999). Asynchronous communication adds to one's uncertainty concerning the reception or interpretation given one's communicative efforts, and leads to issues related to turn-taking and topic maintenance that are not typical of face-to-face communication (Jones, 1998; Herring, 1999). Observed patterns of adaptation include issuing multiple messages in order to obtain a response; creating messages that contain several conversational moves, increasing the efficiency and reducing the number of messages required to complete a task/exchange; and using quotes and links to maintain the coherence of the exchange. Such everyday interactive texts are absent from multimodal research, the design decisions unstudied and the grammatical elements unidentified, while their use and form multiplies.

Persistence, an issue of duration that exists apart from the synchronous/asynchronous dichotomy, is another established variable related to interactivity that significantly impacts a text's form. Persistent conversation has been defined as those texts which may, depending on the tool with which it is created, be "searched, browsed, replayed, annotated, visualized, restructured, and recontextualized"

(Erickson, 1999, pg. 2). Bregman and Haythornthwaite (2003) have theorized three radicals of persistent conversation – visibility, relation and co-presence – that have proven useful in text analysis, on-line education, and software design, including the design of visual supports to address meanings tacitly expressed in face-to-face communication (see Erickson, 2003; Erickson, Halverson, Kellogg, Laff & Wolf, 2002; Erickson & Kellogg, 2002). Graphic visual cues have been used to indicate presence, to portray actions (e.g. listening vs. talking), to allow deception, and to communicate a third-person point-of-view.

Of particular salience to the analysis of such texts is Iedema's (2001, 2003) studies of the reconfiguration of organizational meanings across time and texts, the narrowing range of meanings available and/or open to negotiation as modalities are differentially deployed over a project's lifetime. Iedema's argument centers on balancing objective-analytical insights with socio-historical exploration and understandings of "the unfolding of meaning making across practices, and enquiries into its material consequences" (2003, p. 48). While he analyzes resemioticization *across* texts, interactive and persistent texts pose parallel issues for the negotiation of meaning *within* texts. The procedural logics or rhetorics of bounded texts such as digital games (see Bogost, 2006; Burnett, 2004; Crampton-Smith, 2007; Harrigan & Wardrip-Fruin, 2007), always multimodal, present the "reader" with not dissimilar challenges. The modal deployments and registers of interactive digital communication are neither those of talk or page, neither fixed visual images nor constrained hyperlink paths. They are, however, locations in which text is increasingly negotiated.

The current inability of visual and/or multimodal grammars to grapple with interactivity is largely invisible for, with the exception of Burnett, Dickinson, Myers and Merchant's study (2006), multimodal studies have not focused on these texts. Perhaps the dominance of screen versus page metaphors within social semiotics has inadvertently led researchers to select more stable digital forms. Regardless, there is no reason to believe that multimodal grammars cannot expand to encompass interactive texts/design features and, arguably, such developments are an educational priority for as Jenkins (2006) has written, education has been:

...a product of the need to distribute the skills and knowledge necessary to train informed citizens. The participation gap becomes much more important as we think about what it would mean to foster the skills and knowledge needed by monitorial citizens: here, the challenge is not simply being able to read and write, but being able to participate in the deliberations over what issues matter, what knowledge counts, and what ways of knowing command authority and respect. (p. 259)

Difference

Research into classroom multimodal negotiation of meaning is inherently complex. At any given moment, multiple modes are drawn upon by clusters of participants to realize multiple meanings. It is perhaps churlish, therefore, to point to yet another layer of complexity which requires attention in the analytical task. But while one of the strongest arguments for a social semiotic approach to multimodality is its ability to address culturally embedded multimodal grammars (multilingualism and its multimodal equivalents), recognition of the diverse meaning cultures which students bring to the classroom is almost entirely absent from related research. It is not that researchers are unaware of such issues, for the individual's perception of relevance, inextricably linked with the meaning systems they bring to the classroom, is a key and consistently articulated theoretical precept within social semiotics, argued again and again with particular passion by Kress:

'Interest' is the articulation and realization of an individual's relationship to an object or event, acting out of that social complex at a particular moment, in the context of an interaction with other constitutive factors of the situation which are considered as relevant by the individual. (1993, p. 174)

But when interest is narrowly pursued in research, as when interest is discussed in relation to students' multimodal choices in the production of a science experiment report, then what disappears from view is the interplay between individuals' socially-constructed meaning systems and the classroom's dominant forms of discourse. Even Bearne (2003),

who perhaps has been the most eloquent in writing on the challenges that multimodal pedagogies present in teaching diverse student populations, who has written of the complexities of transition, translation and transduction, and the need for a vocabulary which makes possible the necessary conversations regarding the demands of different texts, makes no mention of multilingualism. The importance of such considerations is demonstrated time and again in studies such as van Leeuwen's analysis of children's museum drawings (2000); Williams' detailed analysis of the practices of joint story reading in the home in contrasted social locations (1999); Gregory, Williams, Baker and Street's description of children's early classroom socialization (2004); and Duff's analysis of the challenges that pop culture references present high school ESL students in mainstream classrooms (2001, 2002). The potential affordances of multimodal pedagogies in highly diverse classrooms is evident in the previously referenced work of Newfield and Stein (2000), Newfield et al (2003) and Stein (2003) in South Africa; in Menezes de Souza's (2003) analysis of the co-deployment of abstracted graphical patterns, figurative drawings, and alphabetic script in texts authored within Brazilian indigenous communities; and Early's (2008) case study of the affordances of the visual in supporting the development of academic writing skills by English-as-an-Additional-Language (EAL) students. Blair and Bourne's (1998) research report on successful multi-ethnic schools is replete with short descriptions of teachers' and students' multilingual, multimodal practices, though the nature of the report precludes detailed analysis of the practices or of meaning's construction. As a research community, we have yet to find adequate means for representing the complex interplay of semiotic resources and meaning systems that are endemic in Canadian classrooms. Perhaps this failure might cause us to pause to consider the adequacy of the current representational systems used within the academic sector of education.

Returning to the School

There is an inevitable tug between change and stability in the research on multimodality in education, but the particular emphasis on transformation combines curiously with the concern for education's failure to adjust to the increasing importance of visual, material, spatial and gestural realizations of meaning. The rich affordances of

modalities are foregrounded such that the complex dynamics of individual, organizational and institutional power are often obscured, Bhattacharya et al's study (2007) the notable exception. Student texts are frequently presented as evidence of agency, yet descriptions of practice and material classroom demonstrate stability far more than change. Though established linguistic genres could not account for all that was communicated in students' descriptions of cells, the teacher's tacit understanding of what constituted an "acceptable" text allowed her to mark a diagram "Needs to be larger" (Kress 2003b, p. 181). A teacher's multimodal orchestration of debate suppressed the betrayal of a friendship as a frame for a personal response to literature, and elevated the frame of gender (Bourne & Jewitt, 2003). Students' interest might guide what they chose to write or draw, but the feedback clearly redirected students to the prescribed and contextually appropriate practices for labeling and layout. The potential of social semiotic theories of multimodality to balance motivated signs, available semiotic resources, and constraints imposed by the social context have been infrequently drawn upon in the on-going attempts to develop a concept of design. Given that design is influenced by one's perception of context, and that context bears the marks of the larger institutional power structures and one's position within them, perhaps the radical impact and transformational power of shifts in the weighting of modalities is overstated.

Further, if meaning has always been enacted multimodally, then the documented multimodal practices cannot stand as evidence of educational or textual change; such change as is evidenced must be seen as residing in the analyst's frame rather than in the practices of meaning. Schooling has rarely been limited to written text, although representations of school in research and policy have perhaps been consistently confined to such. In critiquing assessment practices for failing to acknowledge the multimodality of texts, research on the "new" fails to acknowledge that education, and certainly language education, has long engaged in multimodal practices as a way of guiding students *to* the privileged written text. It might be argued that the continued absence of assessments of and for multimodal texts is an indication of their lack of power, that the focus of formal assessment on the linguistic is recognition of its continuing prominence in relation to the multimodal practices through which one learns to engage with writing. Perhaps the change in the analytical frame merely demonstrates what was "true" all

along, that within the unlimited theoretical possibilities of *all* semiotic systems, power constrains individual agency and power remains with the written text.

Yet changes in the privileged text are evident in the use of images in textbooks; in the technical specificity and density of scientific visuals; in the shift from linguistic to visual interfaces in software; and, most certainly, in the privileged texts that circulate within the larger social environment. More interesting than the reweighting of modalities is the basis on which privilege is assigned, and why, over the last several decades, the modalities of the privileged text have observably been shifting. Arguably, one constant dimension of a privileged text is its ability to transcend its context of production, to carry the author's meaning across space and time. In crafting communications that extend beyond the sphere of one's embodied interactions, a text carries greater potential to impact social orderings, enhance their maintenance or reconfiguration. Perhaps the increasing multimodality of privileged texts is less connected to modal affordances per se than to an aim of saturating interaction, to dominating the communicative spaces which continue to evolve and emerge. If this is true, research on multimodality in digital spaces - what Lemke (2002) has termed hypermodality - takes on new urgency, for the intersections of newly configured modal relations and shifting communication channels results in spaces in which privileged texts are newly negotiated or – at least as likely – existing relations are further cemented. Without analytical tools for critiquing and engaging in these participatory spaces, the potential for agency is diminished.

In this regard, the discourse of new economies, new skills, new technologies, and new basics is increasingly tired, a rather old brand of soap. Privileged texts may be multimodal; however, it would be a mistake to assume multimodal texts are necessarily privileged. This remains largely unarticulated in studies of classroom texts, sitting below the surface of discussions on instruction, realizations, transformation, and assessment. This complicates Kress et al's (2005) statement that they "are united in seeing explicitness as essential; we see it as the sine qua non of equitable participation and practices in the classroom" (p.168). The question remains as to what is to be made explicit.

Eve Bearne (2003) argues:

…whilst there is a demand for recognition of children's textual and cultural capital, there is an equal imperative to present them with the forms of text which are given high status in educational settings…The point of intersection between honouring what children know and pushing their boundaries is just what teaching is all about. (p. 99)

We might add to this the importance of attending to forms of texts which are given high status outside of educational settings, to adjust to increasing rate of textual change by attending to public discourse prior to its recontextualization. Rather than emphasizing multimodality per se, perhaps the increasing multimodality of texts is yet another opening to consider how students are engaged in meaning-making and as meaning-makers. We might revisit the apprenticeship of students in meaning's construction, in analysis of texts' acquisition of privilege, in the conflicts and weavings of meaning that occur across time and space, and in the means by which students' might position their meanings so that they are heard, understood, and acquire privilege, no matter how limited. The point in calling for a language for multimodal meaning-making is not to engage students multimodally, but to engage students in understanding how modes are drawn upon to give weight to ideas as they travel across contexts. In this, though the modal distribution of meaning continues to evolve, the purpose remains unchanged.

CONCEPTUALIZING CONTEXT FOR KNOWLEDGE MOBILIZATION

Introduction

There are two arguments that are central to this thesis: (a) that greater attention must be paid to the apprenticeship of public and tertiary students in practices of knowledge mobilization and creation, and (b) that teachers as professionals should be entitled and expected to engage in the larger knowledge mobilization activities of the institution of education. In attempting to address these issues, it becomes evident that the interdisciplinary field of knowledge management lacks a theoretical frame which might adequately describe such practices and account for the differential privileging of knowledge which occurs in their enactment. Research into knowledge management frequently bifurcates into studies of technologies and processes, or case studies of specific communication and/or operational challenges encountered in an instance of collaborative effort. The core practice of knowledge mobilization, the pedagogic positioning of meaning for new contexts and a less-knowing audience, is obscured by the choice of analytical units. Tacit apprenticeship, provisional and unequal in its delivery, is the inevitable result, the possibility of affording students access to privileged knowledge's linguistic registers unachievable.

Although the field of knowledge management lacks adequate theory for such purposes, this does not suggest an absence of appropriate theory. Issues of knowledge mobilization, in contrast to knowledge management, are fundamentally pedagogical for pedagogy is "the act, process or art of imparting knowledge and skill" (American), teaching "the imparting of instruction or knowledge" (Oxford). In their essence, the skills of one who can effectively mobilize knowledge are the skills of the effective pedagogue, and so education may return to itself in seeking theoretical frames for knowledge transfer. With its emphasis on the relationship between knowers and learners, and on the translation of institutional power into codes governing the pedagogic enactment of knowledge, Bernstein's sociology of pedagogy has particular promise for explicating the practices at the core of knowledge mobilization, thus informing educational practice as it relates to the acquisition of such skills.

As defined by Bernstein (1990), pedagogic discourse is "a principle for appropriating other discourses and bringing them into a special relation with each other for the purposes of their selective transmission and acquisition" (pp. 183-184). Pedagogic discourse, then, is not knowledge per se, but rather a key means by which knowledge is brought to bear on a context, the institutionalized discourse through which the flow of organizational and individual knowledge is transferred or impeded. Though Bernstein's primary focus was schools, his later writings place him among the prescient few who anticipated the disruptions that have arisen from the increasing social and economic premium assigned to knowledge (see also Drucker, 1993, 1994), and, what he termed the pedagogising of society (Bernstein, 2000), suggesting his work has import beyond formal institutions of learning.

Initially, though, it is helpful to consider the twofold relevance of Bernstein's theory of pedagogic discourse in relation to classroom knowledge mobilization practices. First, the discourse of school can be privileging discourses, enacting particular hierarchies of meaning relations which are themselves privileged in the larger social context. Conversely, the discourses of schooling can be repressive and disempowering. By providing a basis for the explication of pedagogic discourse, it becomes possible to assist students in understanding how privileging orderings occur, how meanings are selected and reformulated for classroom consumption and how such meanings value or discount the quotidian knowledge which they bring to the classroom, thus privileging, innocently or otherwise, those whose experiences of knowing most closely resemble the experiences and relations which dominate classrooms. Without the opportunity to develop such understandings, what is taken from the child is the opportunity to recognize how the presentation of knowledge is dis/connected from the world as they understand it; to consciously critique analytic frameworks that unevenly sanction the construal of experience; and to take up (or reject) representations of meaning not as an erasure of what they have learned before, but as a broadening of available meanings, to be strategically deployed for purposes of an individual's choosing. In Canadian educational contexts, in which a diversity of language, ethnic, educational and cultural experiences are the norm, explicit attention to the structuring of academic knowledge offers potential for a more equitable distribution of schooling's advantages, allowing all children greater

access to the (ostensible) content of education. In essence, then, Bernstein's theory of pedagogic discourse illuminates the most fundamental dimension of knowledge mobilization with which a school is tasked: making the privileged knowledge of the larger social context accessible to a child, and providing the basis by which they might acquire meaning-making practices beneficial for lifelong knowledge acquisition.

On this point, it is useful to highlight the differences between Bernstein's work and others whose work focuses on the role of schools in social reproduction. It is the ordering and/or disordering relations of social reproduction that are more frequently addressed in the sociology of education and that are the message to which Bernstein refers in his own description of these practices. In speaking to this message of educational discourse, such sociologies theorize and describe not the pedagogies of the classroom, but the social orderings, critiquing their imposition on the learner and often, implicitly or directly, the particular orderings themselves. In democratic societies, such critiques of educational systems and of their perpetuation of unequal distributions of opportunity can contribute to fruitful discussions of what we would have schools be. Certainly Bourdieu and Passeron (1977), while explicitly avoiding judgments of particular distributions of privilege, productively force recognition of the inevitability of symbolic violence in any reproduction of a cultural form, causing educators pause to consider more fully the larger social repercussions of their actions. However, as Bernstein (1990, 2001) has clearly pointed out, such work does not attempt to analyze how the doing is done, how in the moment-to-moment play of the classroom, language as well as other semiotic resources are sculpted to carry the messages of larger society. A strength among Bernstein's theoretical contributions is his focus on pedagogic discourse, on the principles that govern discourse specifically crafted to enact knower-learner relationships. For this reason, his theories have proven valuable in illuminating how knowledge is circulated to learners and in providing the basis for empirical studies of the recontextualization and framing of knowledge for pedagogic purposes (Christie, 1999; Clark, 2001; Jephcote & Davies, 2004; Morais, Neves, Davies & Daniels, 2001; Morais, Neves & Pires, 2004; Muller, Davies & Morais, 2004). For this reason, his theories are valuable in understanding how institutional knowledge is mobilized within classrooms.

However, if the explanatory power of Bernstein's work is limited to descriptions of how pedagogic discourse is implicated in social reproduction and/or the differential uptake of the formal content of school, it lacks the necessary theoretical robustness for investigating pedagogies associated with knowledge mobilization. It is in regards to this second potential point of Bernstein's theoretical relevance, the apprenticeship of students in the practice of mobilizing quotidian knowledge, that Bernstein may offer more significant insights into knowledge mobilization practices and their related pedagogies. Such pedagogies must extend beyond apprenticing students in accessing knowledge and in critiquing the differential privileging of the forms in which knowledge is realized to apprenticing students in the role of the knower. By definition, insights into pedagogic discourse's principles and a deeper understanding of privileged linguistic registers would be central to such work, enabling students to mobilize their knowledge and understandings of the world in a manner that gains acknowledgement and influence for their perspective. In drawing upon their quotidian knowledge to further academic achievement, and, potentially, in contributing to others' learning and development, students would apprentice in practices that, at the most sophisticated level, contribute to the modification of discourse itself by bringing difference into knowledge's discursive construction. Such are the practices which, when skillfully enacted, are privileged in contexts beyond schools, and to which all students are entitled apprenticeship.

Very few have drawn upon this second point of Bernstein's potential relevance. Thus, while Bernstein's sociology would seem to offer the necessary descriptive power to serve as the theoretical basis for explorations of knowledge mobilization in educational contexts, closer consideration of relevant concepts and principles is required. Here, Bernstein himself establishes the standard for examining the fit between the researcher's intention and the sociological objects and/or concepts which the theory is suited to address, stating, "theory must be very capable of providing an explicit, unambiguous description of the objects of its analysis." (2000, p. 91) Further, in undertaking this endeavor, the intent is not to supplant existing theory but "to show (eventually) what such theories presuppose, what is not addressed, and, perhaps inadvertently, what cannot be addressed as a consequence of the form the theories take" (1996, p. 168). By first setting out what is meant by the term knowledge mobilization and the key dimensions of its

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practice, it becomes possible to consider the conceptual fit with Bernstein's theorization of pedagogy.

Key Issues in Knowledge Mobilization

At it most simple, knowledge mobilization is the practice of sharing knowledge. Although distinctions are made between explicit and tacit knowledge (see for example Nonaka, 1994; Ichijo & Nonaka, 2007), almost all definitions involve the movement of knowledge across contexts (Maznevski & Athanassiou, 2007; SSRHC, 2007) and, to a greater or lesser degree, on the trust relationships that facilitate knowledge flows (Davenport & Prusak, 1998; Cohen, 2007; Foray, 2006; Schuller, 2006). An individual or group, by virtue of prior education, experience or investigation, hold information that is not readily available to others and that is either: (a) useful to a community or organization with whom they work, or (b) useful to another individual, community or organization with whom they have contact. In either case, knowledge accessed in a previous context is introduced to a current context for the future benefit of the individual, organization and/or society. Thus, a theory of pedagogic discourse that might usefully inform the apprenticeship of students in the practice of knowledge mobilization must be able to account for the construction of contexts, and for the movement of knowledge between contexts.

Multiple metaphors are employed for knowledge's movement – flow, mobilization, sharing, transference, dissemination, importing/exporting. However, researchers in the field of knowledge management struggle with the issue that is the most essential to a theory of pedagogy, which is the practice of the transfer rather than the systems in which it occurs (Ichijo & Nonaka, 2007). Knowledge is understood as codified, culturally-embedded and circulated within the context of personal relationships (Davenport & Prusak, 1998; Leonard, 2007), but the "how" of such transfers continues to elide the knowledge management field. For Bernstein's theory to serve as an effective basis for inquiry into pedagogy, it must surpass existing research in its descriptive power in this regard such that the practices of knowledge mobilization can be made visible to the learner.

In relation to this point, a theory which can serve investigations of knowledge mobilization practices within educational contexts and, more specifically, the apprenticeship of students in such practices, must be able to address issues of power and the differential privileging of the discursive construction of knowledge as it is relayed by society's institutions through schools. Difference is at the heart of knowledge mobilization, for without difference a knower-learner relationship cannot exist. However, perhaps because work on knowledge mobilization often focuses on transfers within an organization, or perhaps because struggles with the contextual nature of knowledge receive strong emphasis, discussions of power and the institutional privileging of particular realizations of knowledge are largely absent from research into knowledge mobilization. In classrooms, where the social regulation of ordering/disordering relations constructs the dominant differences which a child must negotiate to take on the position of knower, it will not be sufficient for Bernstein's theory to support microanalysis of knowledge transfer. It must also allow for an explanation of the differential privileging of the discursive and/or textual forms in which a student has chosen to offer their knowledge, and the affordances and/or impediments to the student's efforts. In other words, and as a corollary to accounts of power, it must be able to account for differences in individual agency in the mobilization of knowledge when agency "… refers not to the intentions people have in doing things, but their capability of doing these things in the first place." (Giddens, 1984, p. 9)

Finally, because contemporary societies privilege knowledge mobilization practices for their contribution to creativity and problem-solving (OECD, 2000, 2004, 2007; SSHRC, 2007), and because creativity and problem-solving are fundamentally acts of change, a theory of pedagogic discourse that might inform the apprenticeship of students in knowledge mobilization practices must leave space for the possibility of change, including change to the principles of ordering/disordering that govern relationships beyond the confines of school. This contrasts with theories of change which accord organizational and/or societal properties a structural existence beyond their continued social enactment across time and space (see Giddens, 1984 for discussion). Explicitly distinguishing between theoretical orientations to change is necessary because of the interdisciplinary nature of knowledge mobilization research, with the possible

result that similar terminologies obscure significant conceptual differences. Theories of knowledge management and mobilization focused on organizational performance presume a common intent, either profit- or service-based, which constrains the nature of the hypothesized change. Theories which might inform the apprenticeship of students in the practices of knowledge mobilization, or knowledge mobilization within education's institutional context, may make no such presumption. Rather, in allowing for individual's capabilities as agents, such theories must leave space for genuine choice in practice, such choices involving foreseeable and unforeseeable outcomes, and a corresponding potential (but not inevitable) alteration of the social relations sustained by practice.

Bernstein's Pedagogic Device

A general understanding of Bernstein's theory of pedagogic discourse is helpful before exploring the explanatory potential of the pedagogic device in relation to knowledge mobilization. Here, I begin with a discussion of Bernstein's concept of code, perhaps the most contentious component of Bernstein's theory, before describing its relevance to the construction of contexts. In the second section, the focus shifts to the pedagogic device, with particular emphasis on recontextualization rules and their possibilities for theorizing knowledge mobilization. Finally, I return to code's construction of contexts and categories, elaborating on the concepts of insulation, voice, and message to address issues of the "how" of knowledge transfer, before commenting on the conceptual fit of inquiries into knowledge mobilization practices with Bernstein's work.

Code and Context

At its most simple, a code is the set of principles that govern the meaning relationships within and between contexts. Although Bernstein's theorization of code continued to evolve throughout his life, code was and remains a key concept for the analysis of the means by which individuals are differentially positioned within a culture, providing the explanation for meaning's social basis. In relation to the individual, the concept of code translates into a coding orientation, the principles by which an individual

selects and evaluates meaning(s), giving shape to their experiences and perceptions of available choices. In other words, how an individual interprets the world around them, the significance they attach to the events and texts they experience (and to which they are afforded access for experience), is determined not by the experiences themselves but the principles or code through which individuals organize meaning. A basic understanding of Bernstein's conception of code, then, is essential to understanding the ordering of social relations as it is described within his theory.

Before proceeding, it is critical to understand that codes are semantic in nature, not syntactic nor phonological leading to "to the social structuring of meanings *and* to their diverse but *related* contextual linguistic realizations" (1977b, p.474). Although Bernstein attempted to identify linguistic markers for codes in his early empirical studies, the theoretical shift from forms to meanings preceded work on the pedagogic device. The considerable criticism encountered by his theories largely focuses on early stages of the theory's development, criticism which Bernstein (1977a, 1977b, 2000) has signaled is well-justified. The shift to the semantic, however, does not signal a shift away from language but rather a change in how it is understood. In the continuing discussion of code and of the pedagogic device, the centrality of language and, increasingly, the full range of semiotic resources, remain central to understandings of social reproduction and to the mobilization of knowledge.

Equally, it must be recognized that Bernstein has no interest in proposing a theory of language. In her writings, Hasan (1999a, 2003) acknowledges the impact of the on-going dialogues between Bernstein's "Sociolinguistic Research Unit" and Michael Halliday's "Communication Research Center" (p. 49), and research by those who have expanded upon the two scholar's work is marked by the continuing conversations and readings of their texts. But though "The elaboration of the theory, the data it is able to generate and the variations it is able to describe, the ability to specify exactly the ways in which according to the theory language and consciousness enter into the social processes" accord language a central place in meanings' relations, it is a theory of the social, not of language or consciousness (Hasan, 2003, p. 13). The theory's exotropic qualities allow it to dialogue with theories of other domains, but the theory makes no pretension to being a theory of everything.

The formulation of codes derives from the unequal distribution of power and the principles of control between social groups, which Bernstein defines as the basis for class relations. Codes select and integrate relevant meanings, in the process generating recognized, socially identified contexts, for "what counts as a context depends not on the relationships within, but on the relationships between, contexts" (Bernstein, 1990, p.15). More simply, when a "between" relationship is created, then it is understood that more than one context exists. What is appropriate "in" a context is determined, in large part, by understandings of the difference between that context and others. In a simple example, a formal black tie dinner is different than a kitchen scramble for a bite to eat between work, school, soccer games, and piano lessons. That these are understood as two distinct contexts is because of a shared coding orientation or orientation to meaning.

Halliday and Hasan (1985) raise a parallel point, that "The situation in which linguistic interactions take place gives the participants a great deal of information about the meanings that are being exchanged, and the meanings that are likely to be exchanged" (p.10). The context of situation, the available meanings not directly involved in the exchange, is used to predict or anticipate the meanings that are likely to be communicated. As such, the context is the meaning for the interaction, integral to the interpretation of the interaction itself.

From the perspective of knowledge mobilization, and the apprenticeship of students in such practices, the "knowing" or knowledge is not the critical dimension of understanding. More important is the ability to recognize a context and to have the capability to communicate one's meaning in a manner appropriate to that context, to understand the code governing the communicative space. Bernstein describes the principles associated with these dimensions of practice as recognition and realization rules:

> *Recognition rules create the means of distinguishing between and so recognizing the specialty that constitutes a context, and realization rules regulate the creation and production of specialized relationships internal to that context. (1990, p. 15)*

In that codes, the principles by which practices/texts are identified and interpreted, differ in their determination of what constitutes acceptable practice, similar meanings may be expressed or realized in different forms in different contexts. Conversely, differing interpretations may be made of the same realization. In the middle of kitchen mayhem, "I want bread" may be expressed by someone reaching across the table for a roll. At a black tie dinner, the same recognition and realization rules may attach different meanings to one's reach, and the socially appropriate means of obtaining bread may differ from reaching across the table. Failure to recognize the significance of the two contexts in construing and communicating meaning is taken as evidence of a lack of familiarity with the rules of the dominant code. The person's behaviour is "wrong." Thus, in legitimizing the set of meaning relations appropriate to a given context, codes simultaneously define the ir/relevancy and il/legitimacy of one's construal of the context, and of the interactive realizations of one's meanings.

As theorized by Bernstein, and as supported by empirical research drawing upon his work, the development of an individual's coding orientation begins in the very early instances of interaction, and young children "…have had a massive experience of specific ways of saying and meaning that, orienting them to certain ways of solving problems, different forms of mental disposition" (Hasan, 2002a, p.120). In research conducted in a major urban centre in Australia, the everyday conversations between mothers and pre-schoolers were marked by statistically significant differences: in frequencies of conversational use of conjecture and generalization, what might be termed "decontextualized" language practices (Cloran, 1999, 2000); in the interactions around joint book-reading, including but not only differences in the types and frequencies of questions which were posed, prefacing of questions, and the extent to which questions extended the child's thinking beyond the text (Williams, 1999, 2001); and in the use of prefaced and assumptive questions in conversation, signaling the extent to which the mother presupposed an understanding of the child's thoughts and was open to perceiving context through the perspective of the child (Hasan, 2002a, 2002b). Between the conversational patterns of high autonomy professionals (HAP) with their children, and low autonomy professionals (LAP) with theirs, HAP interactions more closely resembled the discourse of the school, the HAP children thus apprenticing in the recognition and

realization rules of education's privileged discourse before their formal schooling had commenced.

Codes are implicated in the regulation of social relations in all instances of situated exchange of meanings. Distribution of power and control determine the dominant codes; codes translate into recognition and realization rules, constructing meaning relations between and within contexts. Meanings offered by and to an individual are differentially valued and (mis)construed through sets of principles governing meaning's realization, variance between an individual's coding orientation and the dominant code requiring complex interpretative challenges by those less familiar with the privileged text. It becomes evident that codes are, as Bernstein (1990) describes them, culturally determined positioning devices, class regulated codes that "…position subjects with respect to dominant and dominated forms of communication and to the relationships between them" (p. 13).

Classification and Framing

One final set of Bernstein's distinctions is useful in considering the theorization of context for purposes of knowledge mobilization, a set including classification, framing and insulation. "Classification" is the term used by Bernstein to describe the structural relations of social categories/contexts, the "between" relations evoked by codes and created, legitimized and reproduced by power (2000). Classification principles are a function of recognition rules, for recognition rules provide the basis for distinguishing between contexts/categories. "Framing" controls relations within contexts and categories, establishing and maintaining the legitimate forms of communication, and is a function of realization rules. A simple example may by helpful in illustrating the differences between the two. An elementary school may be thought of as a category. It is recognized as a context that has specific relations to and with the community, high schools, families, university teacher education programs and others. There are also the relations between the category of science in school and category of science in the research laboratory; of the rules and purposes of sport in a school in contrast to the rules and purposes in a professional league; between parents' and school's responsibilities for a child's moral development; and, more ambiguously, the nature of a "rule" at home and at school and

the corresponding consequences. Classification rules evoke categories, the *distinction between* categories. Framing rules control how participants might "speak" to each other, the *interaction within* categories. The framing rules of the elementary school generate the relations between teacher and student, resource teacher and classroom teacher, principal and teacher, between subject areas, between spaces for walking and spaces for running, and so on. The categories (classification) and interactions (framing) are the clusters of meanings that have been selected and integrated by a code.

To a reasonable extent, classification and framing are scalable concepts. That is, the analytical units of classification (contexts/categories) may be larger or smaller socially/culturally recognized units – classroom, school, school district, educational jurisdiction – or meaning clusters – people within an organization with deep knowledge of a software design or a group of teachers tasked with implementing a particular pedagogical approach - as is appropriate to the issue under investigation. In investigations of knowledge mobilization, the flexibility in the construction of category/context, and thus what might be understood as contextualized knowledge, helps to resolve the definitional issues often encountered in attempting to identify between relations.

Classification and framing principles operate relatively independently. A particular context/category, evoked by a set of recognition rules, may be strongly or weakly classified, while the relations/interactions within classifications (contexts/categories) governed by realization rules, may be strongly or weakly framed. For example, in an elementary classroom, a relatively strong classification in most British Columbia school districts, the interactions may be weakly framed. The specific relations between knower-learner/teacher-student, the control over forms of "academic" work, and/or the structure of the academic disciplines may be more or less strongly controlled, without altering what is externally constituted as an elementary classroom. The elasticity of classification and framing principles, however, is not unlimited, for unlimited elasticity would call into question the power relations governing the larger social order. To define the limits of a particular set of recognition and realization rules, Bernstein (1990) adds the construct of insulation. Insulation defines the between-space of categories and:

> *It is the strength of the insulation that creates a space in which a category can become specific. If a category wishes to increase it specificity, it has*

to appropriate the means to produce the necessary insulation that is the prior condition to its appropriating specificity. (p.23)

The stronger the insulation or perceived difference between categories, the more strongly they are classified. The arbitrariness of the classification, its reliance on the continued social acceptance of a particular constellation of meanings, themselves derived from the ordering of social relations, is suppressed or muffled by the degree of insulation. Classification, framing and insulation will take on particular importance when considering how change might be conceptualized in Bernstein's framework. However, at this point, there is sufficient information to consider the theoretical possibilities in relation to the topic of knowledge mobilization to education.

Codes and Knowledge Mobilization

To summarize this portion of the discussion, Bernstein's development of the concept of code has a high degree of relevance to explorations of knowledge mobilization because its theoretical construction of context centers on meaning relations. Simple correlations between organizational/social units and knowledge/meaning are no longer assumed, as in investigations of systems and procedures. Nor are investigations reliant on identifying knowledge brokers or mediators, an alternative approach to the contextualized, interpersonal dimensions of knowledge transfer sometimes adopted in knowledge management theories. Rather, contexts are understood as meaning constellations, and knowledge is not so much contextualized as differentially recognized and realized through a privileged code. Conceptualizing contexts semantically makes apparent that knowledge mobilization is not only about the distribution of texts/knowledge across contexts but also the distribution of coding orientations to texts/knowledge, within and/or between contexts. The distinction between relevant and irrelevant/illegitimate meanings within a context reflects codes and coding orientations derived from the unequal distribution of power in the larger set of social relations. Knowledge transfer requires the appropriation of the recognition and realization rules of the dominant coding orientation, the explication of the code made possible by focusing on the semantic and lexicogrammatical/semiotic forms of privileged texts. To the extent

that coding orientations overlap and/or are complementary, positioning knowledge for its acceptance by another is a less complicated task. To the extent that meaning systems are in conflict, far greater challenges face an individual in realizing meaning as a privileged text.

The theorization of context as meaning deepens our understanding of the requirements of knowledge mobilization, the practice of knowledge transfer potentially facilitated by: (a) increasing the transparency of the recognition and realization rules which govern the realization of meaning; (b) apprenticing members in their acquisition of the same; and/or (c) weakening the rules governing realizations of acceptable texts. Within an organization, selecting people whose skills, abilities and meaning orientations are congruent with the organization's purpose mitigates the challenge of knowledge mobilization, member selection and framing of the legitimate forms of communication being translations of the power and control accorded to the organization by the dominant code. Though organizations seek diversity because of potential benefits accruing from its application to shared objectives, they retain the ability to constrain permissible realizations of meaning, and changes to practices will be undertaken only to the extent that they support and/or enhance current distributions of power. Thus, theorizing contexts as meaning also has potential for researching internal pressures to limit knowledge flows, by highlighting how categories' claims to legitimacy are supported or challenged by organizational efforts to increase the movement of knowledge.

Schools, however, particularly public elementary and secondary schools, cannot control the scope of orientations to meaning which students bring to the classroom. Neither can educational institutions limit the scope of categories with whom they must negotiate – parents, publics, disciplines, fields. The coding orientations of the full social diversity have a legitimate interest in the pedagogic practices/knowledge mobilization efforts of education. However, the dominant code differentially positions students, parents and publics in their relations to and in school. Transparency, apprenticeship and/or framing of legitimate communication are theoretical options for educational institutions as they are for other organizations, but the distributions of power in the multi-stakeholder relations are more complex than within a single organization.

Pedagogic Discourse, Power, and Agency

The Pedagogic Text

Previous writing on knowledge management has focused on the contextualized nature of knowledge. In conceptualizing context as meaning, knowledge mobilization becomes a practice of repositioning meanings' relations, facilitated or impeded by access to the relevant recognition and realization rules. Theorizations of codes, recognition and realization rules, classification and framing, and insulation also provide an initial basis for understanding the differential privileging of knowledge resulting from distributions of power and social control. However, these concepts are only a beginning. Describing the practices of knowledge mobilization requires distinguishing between the purposes for which meanings are brought into contact, not all realizations of knowledge being designed for knowledge transfer/pedagogy, and identifying the principles which govern pedagogic texts' discursive construction. To apprentice students in the practice of knowledge mobilization, the principles of such practices must be identified and taught; that is, it must be possible to render pedagogical the practice of pedagogic discourse. However, as Bernstein (1990) pointed out in the process of developing his model of the pedagogic device:

> *…what is absent from pedagogic discourse is its own voice. If theories of cultural reproduction or transformation of culture formulate ordering or disordering principles, then those principles relate to the message of pedagogic discourse, not to the ordering/disordering principles intrinsic to its logic as a specialized discourse. (p. 165)*

Here, Bernstein's (1990) work goes beyond what has been theorized within research on knowledge management, and enables one not only to "analyse how the text has been put together, the rules of its construction, circulation, contextualization, acquisition, and change" (p.177) but also "how the distribution of power and principles of control establish a regulating discourse" (p. 167). For the "how" of knowledge mobilization, we turn to Bernstein's theories as they relate to pedagogic discourse and the pedagogic device.

The orientation point for the theoretical development of pedagogic discourse is the pedagogic text, with text used "…in both a literal and in an extended sense. It can refer to the dominant curriculum, dominant pedagogic practice, but also to any pedagogic representation, spoken, written, visual, postural, sartorial, spatial" (1990, p. 175). In contrast to many contemporaneous definitions of text from the field of literacies, Bernstein makes a considerable effort to constitute texts as multimodal, describing spatial and visual elements of the home environment as a means of differentiating the local/community pedagogic texts from those a child encounters prior to and throughout their formal education. Workspaces, departmental resource allocations, and meeting arrangements, including the variances between and within industrial sectors, construct their own texts in organizational contexts. The potential for a pedagogic text is distributed across modalities, purpose not materiality determining how a text should be understood.

Pedagogic texts can be privileging; that is, the pedagogic subject's coding orientation positions them in relation to a text, with a text's meanings more accessible to those whose orientation to meaning more closely resembles the orientation of the pedagogic text. However, in the translation of meaning for the purpose of transmission, pedagogic discourse is not merely a relay of the larger social relations. The translation creates spaces or gaps, the rules of pedagogic discourse's ordering relations generating its own set of meanings. These rules – distributive rules, recontextualizing rules, and evaluation rules – are hierarchical in that distributive rules regulate the scope of recontextualizing rules, and recontextualizing rules regulate the scope of evaluation rules. Because of the nature of the particular focus on knowledge mobilization, emphasis will be placed on recontextualization; however, this does not diminish the role played by each rule set in knowledge transfer.

Distributive rules are the means by which, for pedagogic purposes, "different orders/orderings of meanings can be said to create different knowledge/practices" (Bernstein, 1990, p.181) and distinguish between the "thinkable" and "unthinkable" (Bernstein, 2000). Like recognition and realization rules, distributive rules devolve from the uneven distribution of power, and are an attempt to order systems of meaning, therein controlling the permissible realizations and specializations of consciousness. The distinction between thinkable and unthinkable arises from the gap between the material

world and its discursive realization, the gap creating potential for alternate realizations and the "yet to be thought". Distinctions between the thinkable and unthinkable, the maintenance of the arbitrary, can only be accomplished by the exercise of power, and those benefiting from the current set of meaning relations must apprentice agents capable of continuing to exert the appropriate control. However, in doing so, the gaps are made visible, opening up the possibility for new meanings and new realizations. Gaps, possibilities, and new realizations mark the changes within disciplines, fields of study, and areas of expertise.

The distributive rules create what Bernstein (2000) terms "the field of the production of discourse", stabilizing but inherently unstable, and "mark and distribute who may transmit what to whom and under what conditions" (p. 31). One need look no further than the disciplinary fields within tertiary education, the rules which determine who may research, who may publish/speak, who may teach, who may be taught, and who may be taught to teach, to begin to understand how distributive rules lead to the practices observed within societies.

In the pedagogic device's hierarchy of rules, distributive rules are first because they generate the field of the production of discourse. Once the meaning relations of a discourse are established, it becomes possible to consider how discourses are recontextualized for pedagogic purposes. Pedagogic discourse is, by its nature, delocated from the field of production, from where it is created, used and/or needed, and relocated to a distinct site for the purposes of transmission and reproduction. In a sense, as Bernstein points out, pedagogic discourse is an imaginary discourse, for it has no purpose other than transmission of an originating discourse/set of meaning relations. Tracing the recontextualization of the disciplinary discourse of history illustrates how discourse is altered when translated for pedagogic purposes. That history is understood as a classification, independent of a holy book, myth, language, a nation's balance of accounts, records of births and deaths, and/or archeological/architectural remains, is a reflection of the ordering of meanings of the dominant code, as translated through its recognition and realization rules. To maintain its separate identity and its meaning relations, to maintain and/or strengthen the insulation which sets apart the discipline of history from all other disciplines, it is necessary to apprentice others in its meaning

relations, the teaching or apprenticeship of such meaning relationships governed by the pedagogic device. Distributive rules govern who controls the discourse of history, who may write it, who may teach it, and how the meanings will be realized in text. However, in teaching history, in contrast to writing history, the discourse is transformed. At the level of elementary school, social studies classes have their own meaning relations – relations to other disciplines, relations to the practices of citizenship, relations to how one construes one's experiences outside of school. It is history transformed, and the principle that governs its transformation is the recontextualizing rule.

Pedagogic discourse, then, must be conceptualized as something more than that which it seeks to transmit, a pattern that has existed and exists separate from the originating discursive field. Bernstein's original quest in defining pedagogic discourse began, in part, because of his perception of the remarkable uniformity in the way that school and schooling is organized across cultural contexts. The pattern extends to learning/training environments within organizations whose formal purpose is not education – to the intra-organizational education, training and development programs variously distributed across the public and private sector – and, as will be argued further, to formal acts of knowledge mobilization/transfer. As pattern rather than content, Bernstein theorizes pedagogic discourse as a principle, a principle which (as stated earlier in the paper) appropriates and brings other discourses into special relation to each other. Thus, pedagogic discourse is a principle which takes on the meaning relations established by the dominant code's recognition and realization rules, the classifications and framings that are the realizations of power inequalities and the distribution of control, but in reconstituting such relations for transmission, transforms the relations it is seeking to transmit. In recontextualization, the "how" of the practice of knowledge mobilization takes form.

Having emphasized its difference, it is worthwhile to remember that pedagogic discourse occurs within the recognition and realization rules of the dominant code, and the rules of the pedagogic device. The gap between what seeks to be represented (the texts generated by the field of production of discourse) and what is represented by the imaginary discourse of pedagogy, is similar to the gap entailed by the distributive rules, and gaps always allow for the possibility of alternate meanings. However, gaps are also

protected by the privileged code and the privileged text, and the recontextualizing rule, the principle of pedagogic discourse, attempts to control this gap by "embedding a discourse of competence (skills of various kinds) into a discourse of social order in such a way that the latter always dominates the former" (Bernstein, 1990, p. 183). The discourse of competence, the special competencies and their meaning relations, is defined by Bernstein as the instructional discourse (ID), and the discourse of social order, its relations and identities, the regulative discourse. The embedded relation between instructional discourse and regulative discourse, expressed as ID/RD, useful for analytic purposes, results in the singular realization of pedagogic discourse, serving the purposes of selective transmission while maintaining its own ordering of relations.

History may again serve as an example as to what this might mean for a child in school, and the relevance of the pedagogic device to issues of knowledge mobilization. History becomes Social Studies when the discourse of history is recontextualized for elementary classrooms. Social Studies is not the study of original documents, the discourse of post-colonial theory, or the writing of case studies. Neither does the discourse of a Social Studies classroom resemble a doctoral seminar, nor the teacher's relation to the pedagogic text resemble that of the professor's, nor are students selected for participation for the same purpose. The meaning relations are transformed while the discourse of history is being selectively transmitted.

A student (dis)engaged in a discussion on public dissent would encounter a very different pedagogic text in a Grade 5 Social Studies than they might in doctoral discussions on Indian independence, a different set of rules as to what might be spoken by whom and for what purpose. The meaning relations, the allowable text, the comprehensible text for those whose coding orientations may not align with the child's/student's, are not the same either in the sense of the recontextualized history offered to the learner, or the relations of the knower to learner. How might either student offer their personal experiences of civil strife in Sri Lanka? What would be demanded of the learner for them to take on the position of knower, and recontextualize their knowledge for the purpose of its selective transmission? For the flow of information to reverse, the student must be able to recontextualize their lived experience within the frame of the pedagogic text. The student's quotidian knowledge, the rich, first-hand

experience of public dissent, can only be mobilized if/when they are sufficiently apprenticed in the relevant and/or dominant recognition and realization rules. The regulative discourse, the "selection, relation, sequence and pace…provides the rules of the instructional discourse itself" (Bernstein, 2000, p.34), the instructional discourse ordered by the regulative such that only one discourse remains. Though perhaps a dramatic (but not unrealistic) example of a Canadian classroom, it allows one to imagine how meanings are recontextualized for transmission, but also the possibilities and challenges of teaching recontextualization practices, of apprenticing students in bringing their knowledge to bear in the pedagogic text's discursive construction.

Before considering further the dominant and dominated recontextualizations of knowledge prevalent in schools and their relations, the third rule of the pedagogic device, the evaluation rules, must be defined. Evaluation rules interact with the pedagogic text at the point that it becomes less abstract, at the point that decisions are made as to what students are expected to learn (acquisition), how it will be taught (transmission), and how the learner's performance will be assessed (evaluation). It is the final translation of the pedagogic text through the ordering rules of the pedagogic device, the stage at which the serialized transformation effects lead to a single code governing the meaning relations of a classroom. Evaluation rules generate the specific space in which students will or will not be afforded the opportunity to apprentice in the practices of knowledge mobilization. Though largely absent from the remaining discussion, they are nonetheless a potential point of enquiry for related classroom practices.

The discussion of the pedagogic device to this point has focused on the translation of power and control through the fields of production of discourse to the classroom, drawing attention to the rules and principles which govern the remaking of meaning for pedagogical purposes. It has also been argued that the rules and principles of the pedagogic device are relevant beyond the institution of school, that the formal education, training and development activities of non-educational institutions are governed by the same distribution, recontextualization and evaluation rules, and that the theory has application more generally in relation to practices of knowledge mobilization. However, as a social theory whose primary interest is the institutions of the State, the specific relations between fields and disciplines must be approached more cautiously when

extending the ideas beyond institutional realms. The span of the State's influence is not limited to the agencies by which it is defined, but its centrality in relation to the fields of production and symbolic control is not assured, and the structural relations of disciplines and fields, the particular distributions of power that translate into the relevant pedagogic discourse of reproduction, may not reflect the distributions of State institutions. While the dominant principles of the society, contested but sufficiently stable to define the boundaries of the State's official pedagogic discourse, will necessarily be reflected in the pedagogic discourses of all society's actors, they will have undergone their own processes of recontextualization and translation, and will have been transformed to reflect the interests and intentions of the particular power distributions of the relevant fields.

That said, because the interest of this thesis is the apprenticeship of students in practices of knowledge mobilization, and the place of teachers within the knowledge mobilization practices of education, the tierings of educational (in contrast to pedagogical) recontextualization, and the spaces this affords for agency and change should be noted. As defined by Bernstein (1990), the official pedagogic discourse is defined as "Official rules regulating the production, distribution, reproduction, interrelation, and change of legitimate pedagogic texts (discourse), their social relations of transmission and acquisition (practice), and the organization of their contexts (organization)" (p.193). Official pedagogic discourse emanates from the state - its ministries, officials, and selected advisors – who, by virtue of their position within the larger social relations, act as recontextualizers of the interests and relations of the spheres of production and symbolic control in defining "what" and "how" students will learn. Official pedagogic discourse is further recontextualized within the pedagogic recontextualizing field, the universities and colleges of education, schools, publishers and specialized media. Within each recontextualizing field, the strength of the classification and framing relations set the boundaries and limits of the power and scope for the recontextualizing activities of those ever closer to the moment-by-moment interactions of teachers and students. The extent to which an individual school and/or classroom can establish and enforce their classification and framing relations is a function of their relative power vis-à-vis other agencies involved in the recontextualization processes which define pedagogic discourse. In turn, the strength of the classification and framing

relations of the school/classroom define the relations to and with the immediate community, and the parents and children whom they serve, including but not limited to the relations to and within the school's/classroom's pedagogic text. Always, at every turn, the knowledge that might be mobilized, the instructional discourse, is embedded in the regulative discourse that classifies and frames the participants' relations.

In recontextualization - in the power to shape the instructional and regulative relations of pedagogic discourses, and in the gaps which leave space for the yet to be spoken and/or thought – lies the device's affordances for describing the differential privileging of knowledge, and the possibilities for agentive acts in taking the position of knower. The relevance of one's "content" or "disciplinary" knowledge is not sufficient to demonstrate the capabilities on which agency is predicated. Knowledge mobilization requires a command of the recognition and realization rules as they pertain to the regulative dimensions of the pedagogic text, an understanding of the between and within relations that dominate the context of the interaction. The meaning relations of the regulative discourse are always the more powerful, though not necessarily the more visible (Hasan, 2004), in the singular code governing a pedagogic context.[45]

Voice, Message and Knowledge Mobilization

In its construction of contexts, and in its ability to simultaneously account for the differential privileging of knowledge and for agency in its execution, Bernstein's sociology of pedagogy has been shown to address two dimensions of knowledge mobilization. In affording space for agency, in theorizing the gaps between the material world and its discursive construction, the recognition and realization rules and principles of the pedagogic device yield the latent possibility of change, for realization of the

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[45] Maton (2000, 2006) makes a related claim in his discussion of "languages of legitimation", arguing "Social power and knowledge are intertwined, but irreducible to one another; knowledge comprises both sociological and epistemological forms of power. Thus, by conceiving educational knowledge as legitimation, an awareness of the structured and positioned nature of strategic position-takings within a field may be brought together with an emphasis upon the structuring and non-arbitrary nature of potentially legitimate knowledge claims, i.e. embracing 'relations to' and 'relations within' analyses of knowledge, the knower, and the known" (2000, p.149). However, in the recontextualized and recontextualizing fields of primary and secondary education, the principles of the pedagogic device generate the relations of knowledge to the world and to a meaning-maker, embedding the "what"/instructional discourse within the regulative. As Bernstein (2000) points out, unlike other discourses, the voice of education is never an arbitrary.

previously unthought and unknown. But there still remains the issue of the "how" of knowledge transfer, a capacity for description that goes beyond the positioning and preferencing of meaning. A return to the concept of insulation, expanded to include voice and message, becomes the focus of this final point of comparison.

Voice, as defined by Bernstein, is a function of classification principles, and the "voice of a social category (academic discourse, gender subject, occupation subject) is constructed by the degree of specialization of the discursive rules regulating and legitimizing the form of communication" (1990, p. 23). Voice is the "talk" of a category, its degree of uniqueness determined by the strength of the insulation between categories, the "distinction between" relation. As a function of classification principles, voice is an outcome of the power relations within a society/culture, and a basis by which an arbitrary set of meanings is able to maintain its dominance. In voice, in discourses, are the specialized meaning relations that set one category apart from another.

Voice evolves, in part, from the form - the internal meaning relations - of the discourse and/or knowledge structures of its field of production, which is also a basis by which a voice establishes its internal and external legitimacy (Bernstein, 1999; Maton, 2000, 2006; Moore & Muller, 2002). The distributive rules of horizontal discourses, the language of the everyday, and those of vertical discourses, specialized discourses marked by integration at the level of meanings, vary the resulting knowledge structures and transmission/pedagogic practices. Knowledge is segmented within horizontal discourses, and evaluation is conducted as an assessment of competence, competence in one segment of local or common knowledge having limited impact on (assessed) competence in any other segment. In contrast, the distributive principles of vertical discourses, such as those associated with the disciplines of formal education, accomplish transmission through practices of recontextualization, and the evaluation principles result in graded performance. Within vertical discourses, further differentiations are made between horizontal and hierarchical knowledge structures. In hierarchical knowledge structures, as typified by the sciences, "the form of knowledge attempts to create very general propositions and theories, which integrate knowledge at lower levels, and in this way shows the uniformities across an expanding range of apparently different phenomena" (p. 161). The powerful voice within hierarchical knowledge structures is one which can

assert even greater generalizations while withstanding or absorbing critical challenges. Horizontal knowledge structures, in contrast, exist as (relatively) non-translatable languages, each with its own set of assumptions and criteria of legitimation. As such, within the humanities and frequently the social sciences, the efforts of academic communities often "…are oriented to speaking/acquiring/developing the hegemonic language or its challenge or marketing a new language" (p. 163).

It is in Bernstein's formulation of voice that one begins to see the powerful outlines for supporting microanalysis of knowledge's transfer. In voice is power and positioning, knowledge but also the recognition and realization rules required for sharing and understanding. Knowledge is not only a thing, but a thing that is constituted by particular logics - systems of reasoning, argument and representation of meaning. But though the continuing development of Bernstein's concepts of vertical and horizontal knowledge structures and their formation (see for example Maton, 2006; Moore, 2006; Muller, 2006) offers insights into academic voices, such work alone cannot offer a fine-grained analysis of its object of analysis. Here the work of Bernstein reaches out to the work of Halliday, for:

…the conception of 'knowledge' as something that exists independently of language, and may then be coded or made manifest in language, is illusory. All knowledge is constituted in semiotic systems, with language as the most central; and all such representations of knowledge are constructed from language in the first place. (Halliday, 2004, p. 3)

It is the openness of Bernstein's work to theories of semiotic systems that affords the specificity lacking in studies of knowledge management and sociology per se. The pedagogic device, the principles by which knowledge is recontextualized and embedded within a regulative discourse for the purpose of transmission, generates the pedagogic texts within which knowers/learners negotiate, gain, refute and/or share knowledge. The dominant text reflects the category's voice - the student voice and the voice of the pedagogic text. Mobilizing knowledge requires placing one's understandings within the text, requires the realization of one's meanings in patterns that approximate the categorical voice. The patterns are patterns of language and, more generally, semiotic

systems. Drawing again on the exogenous properties of systemic functional linguistics (SFL) and Bernstein's sociology of pedagogy, such patterns may also be understood as registers.

Registers are patterns of instantiations associated with a given type of context (Halliday, 2004, p. 27; Halliday & Hasan, 1985; Hasan, 2003). Conversely, a type of context - a classification – is associated with a set of meaning relations, which are realized in patterns of texts. These patterns, which in accordance with Halliday and Hasan (1985) can be explained by but are not constitutive of the linguistic system, essentially function as a choice from the system, a set of meanings understood as appropriate to the context and from which flow the individual's semantic and lexicogrammatical choices (Matthiessen, 1993, p. 236). The concept of linguistic registers, framed within contexts of interaction, parallels the theoretical concept of classification, providing the rationale for a semantic and/or lexicogrammatical analysis of voice. The possibility is afforded of making visible instantiations of knowledge flows generated by the privileged recognition and realization rules.

Microanalysis of knowledge flows is not possible without a theory of semiotic systems. Without a theory of language, of meaning, the semiotic representation of a semantic understanding remains a black box, a contextualized understanding whose transfer can be analyzed only at the grosser levels of exchange. Language is the essential addition to Bernstein's sociology of pedagogy for investigations of knowledge mobilization, for language:

> …*is a theory about the material world: language models the time-space environment, including itself, in a "rich" theoretical mode: that is, both construing it (our ideation base) and enacting it (our interaction base)…. it is a metaphor for the material world: the way language itself is organized, as a stratified, metafunctional system, recapitulates – acts out, so to speak – both the make-up of this environment in natural (physical-biological), social and semiotic systems-&-processes (our metafunction) and the internal contradictions, complementarities and fractal patterning by which all such systems-&-processes are characterized. (Halliday & Matthiessen, 1999, p. 602)*

Analysis of language use is the vehicle for making visible the "how" of knowledge transfer.

Bernstein (1990) noted the analogous relationship between his concept of voice and register early in his development of the pedagogic device, using the concept as his point of departure for distinguishing between voice and message, arguing:

> *...voice is a little similar to register. However, accredited knowledge of these discursive rules (rules regulating and legitimizing the form of communication) is one thing and their realization in a local context is quite another. Thus knowledge of the rules does not necessarily permit knowledge of their contextual use. Their contextual use is, from this point of the view, the message. (1990, p. 23)*

Voice is the abstracted discourse of a category; message is an instance of communication, particular and specific to a moment and time. Message is the individual's approximation and understanding of voice in the presentation of their ideas, emotions, thoughts, and sense of being. It is worthwhile noting that Bernstein does not presume the extent to which an individual will or will not seek to "fit" a message within the privileged voice or the effort they will invest in comprehending another's offer of information, only that an individual's coding orientation impacts upon one's facility with the dominant recognition and realization rules, and that facility with such rules affects the extent to which a message may be deemed legitimate/illegitimate.

The separation of voice and message, strengthened by attention to linguistic register, further enriches the analytical lens through which one may examine the practices of knowledge mobilization. First, the variance between voice/register and an instantiation of meaning yields a more delicate analysis of the success and/or failure of knowledge mobilization efforts than is possible through a conceptual analysis of coding orientations alone. In analyzing the voice/message variances, it becomes possible to "see" the initial acceptance or rejection of knowledge in interaction, and the extent to which conformity to a category's voice has or has not impacted on the uptake of the proffered information. It opens possibilities for detailed analysis of multi-voiced interactions, the tensions and challenges to voice which occur in the contexts of field, and the destabilization and

reforming of voice(s) in organizations. Secondly, with insight into the patterns of instantiation that constitute a context's registers, one is afforded the possibility of learning to strategically place one's message among voices, and to do so in a manner that gains acceptance for the proffered knowledge. Discussions of a classification's language of legitimation (see Maton 2000, 2006) offer the basis for insight into a category's recognition rules. But, as Bernstein points out, knowledge of discursive rules differs from their contextual use. By analyzing and apprenticing in the details of a voice's discursive practices, a different kind of knowing is afforded, one that facilitates participation in rather than identification of knowledge mobilization practices.

Knowledge mobilization is ultimately targeted at change, whether at the organizational or social level. In an individual's message lies such latent potential, for a message that challenges the acceptable limits of a voice carries the potential for its alteration. An alteration in voice entails the possibility of an alteration in the insulation protecting the category's distinctiveness, any weakening of which impacts upon the strength of the classification. A message is the first location of the previously unthought and unrealized, a challenge to the meanings imposed and maintained by power, and realized in the privileged text. In an analysis of message, in the instantiations of register, are revealed the struggles of meaning that represent knowledge's acceptance or rejection, the possibilities for change and creativity that are the promise of knowledge mobilization and a potential threat to existing orders. The "unfit" message does not cause change, but it is a prerequisite for shifts in symbolic ordering.

But, as it relates to formal educational contexts, the possibility of genuine choice and alterations to social relations should not be overstated. Within pedagogic contexts, particularly those of public education, students' approximation of the pedagogic voice and the intentional shaping of consciousness must be understood as fundamental to the purpose of school. The continuous reshaping of a student's message, the effort of "fit" and "fitting" to privileged registers, are the assigned responsibility of teacher and student alike. These implications of the pedagogic device's principles, the relationship they establish between voice/register and message, and their positioning of students' existing knowledge, did not fall outside Bernstein's (2000) notice:

I should make quite clear that it is critical for students to know and to feel that they, the experiences which have shaped them, and their modes of showing are recognized, respected and valued. But this does not mean that this exhausts the pedagogic encounter. For to see the pedagogic encounter only in terms of a range of potential voices and their relation to each other is to avoid the issue of pedagogy itself; that is the appropriate classification and framing modality. When this is considered then, institutional, structural and interactional features are integrated in the analysis. Necessary resources (material and symbolic) can be assessed to become the site for challenge of what is and demands for what should be. (p.174)

Thus, as it relates to knowledge mobilization in formal educational contexts - in contrast to pedagogic interactions - the "how" to which theories of voice/register and message contribute is an understanding of the "how" of recontextualization, and the potential for a temporary reversal in the direction of the recontextualized flow of knowledge described by the pedagogic device. The limits on message do not necessarily foreclose the knowledge that may be circulated within a context, though they define the voice/register that must be attained to establish a message's legitimacy. While the regulative dimensions of pedagogic discourse, in which the proffered knowledge will always be embedded, lie outside the students' control, the distinctions between voice and message leave space for the meaningful introduction of quotidian knowledge to the academic discussions of the classroom, and for apprenticing students' in the analysis and use of registers.

Bernstein, Pedagogic Contexts, and Knowledge Mobilization

In reflecting on the trajectory of his writing and that of others who extended his theories, Bernstein noted that his inquiries began with a problem, which resulted in a theoretical proposition subsequently tested by empirical studies, which in turn served to further elaborate theory. The problem that is the originating germ for this thesis is that diversity is recognized as a creative and organizational asset, a contributor to the social

and economic well-being of individuals and societies, and yet we have little in the way of theory to guide pedagogical practices that capitalize on the diverse knowledge assets students bring to school, or that apprentice students in mobilizing their knowledge for theirs and/or others' benefit. Further, to the extent that teachers engage in such practices, there are no systems in place for mobilizing knowledge about such practices, current accountability systems generally being limited to a narrow band of indicators of limited informational value to educational stakeholders. On the basis of multiple criteria – a conceptualization of context; the capacity to provide a rich description of the "how" of knowledge mobilization; the means by which to account for the differential privileging of knowledge but also to account for individual agency in unequal power relations; and the latent possibility for the realization of the unthought and unknown, the space of social change – Bernstein's sociology of pedagogy has demonstrated its capacity for supporting inquiries into knowledge mobilization, justifying the development and testing of the related propositions against relevant empirical evidence.

Accepting Bernstein's theorization of pedagogic texts and conceptualizing contexts as meaning clusters challenges prosaic metaphors of a child's quotidian knowledge. Such meaning is no longer background knowledge, nor something to be connected to school knowledge, nor is it inappropriate for the school context. Rather, quotidian knowledge is present knowledge that's relevance may pass unrecognized by the student and/or teacher. Relevance lies in the realization of meaning in relation to a given context, not in the meaning itself or the location in which it was acquired. The core knowledge mobilization practice of schools, the mobilization of privileged knowledge for the child's acquisition, unarguably rewards those whose coding orientations approximate the privileged text:

> *…part of the social system is the distribution of the contexts in which persons move and the registers associated with these contexts that they have access to, so registers reflect the division of labor within a society. To put this another way around, persons have different registerial repertoires (the range of registers a person has learned to use in the appropriate contexts) and their repertoires will help determine the range of contexts they can move in. (Matthiessen, 1993, p. 241)*

But school is undeniably about the expansion of students' registerial repertoires, not only the expansion of knowledge, and while students arrive at school differentially positioned, one's initial positioning is not an indictment of potential or final attainment:

> *The difference between the children is not a difference in cognitive facility/power but a difference in the recognition and realization rules used by children to read the context, select their interactional practice, and create their texts. (Bernstein, 1990, p.104)*

These understandings bring full circle the premise which began this paper - the need for pedagogies that extend beyond apprenticing students in accessing knowledge and in critiquing the differential privileging of the forms in which knowledge is realized to apprenticing students in the role of the knower. The propositions that will follow focus on pedagogies which might assist students in developing a deeper understanding of privileged linguistic registers, enabling students to mobilize their knowledge and understandings of the world. But they will also test Bernstein's theory against teachers' attempts to engage in knowledge mobilization beyond the classroom, to examine the extent to which the theory's principles generate descriptions and explanations that can account for the dynamics of knowledge mobilization practices in the larger social sphere. In and out of the classroom, the problem of knowledge mobilization is the point of the inquiry.

PROPOSITIONS AND TESTING

Propositions

An initial theorization of knowledge mobilization can be judged only on the basis of its internal logic. The more robust test is against empirical data, and so theory testing dominates the remainder of the inquiry, a first attempt to assess the value of the theoretical tool to examinations of Canadian classrooms. Returning to Dubin, the propositions against which the theorizing is tested should reasonably be expected to corroborate or require modification of the theorizing (1978). That is, there should be a legitimate possibility that the tests will "falsify" the theorized concepts and/or relations, for theorizing as engagement with a problem/opportunity, in contrast to problem-solving, is a search for on-going refinement rather than a clear solution.

The three propositions which follow implicate two key dimensions of the theorizing of knowledge mobilization as they relate to the pedagogic device and, more particularly, the recontextualizing rule: a) the relative importance of the range of modalities to the mobilization of knowledge and b) the directionality of flows of meaning across contexts. In each of the propositions, recontextualization signifies a successful flow of knowledge from one context to another; that the text's author has achieved their purpose for generating a pedagogic text.

1. Recontextualization is, in part, dependent upon the range of semiotic resources afforded a category.

2. Student recontextualization of quotidian knowledge for academic purposes requires approximation of the voice of the pedagogic text.

3. The viability of teachers' accounts of literacies practices is dependent, in part, on the development of a semiotic register in which teachers occupy a recognized position from which to recontextualize pedagogic practices and texts (including the student recontextualization processes these particularities evidence) for the purpose of public accountability.

The first proposition, equally applicable to students' and teachers' recontextualizations, targets theoretical assumptions regarding the realization of knowledge.

- If multimodal texts are increasingly privileged as has been asserted, then one may reasonably expect that successful recontextualization employs a range of semiotic resources, for such texts will approximate the modalities of the privileged voice/register. Authors who have limited access to the spectrum of semiotic resources, or who limit/are limited in their ability to employ a range of such resources can be expected to be less successful over time in recontextualizing their knowledge. Thus, the category's affordances, material and/or symbolic, are equally relevant to an individual's efforts to recontextualize their knowledge.

- Further, as modalities differ in their affordances for the realization of meaning, and meanings are differentially distributed across modes within and across languages/discourse communities, limited access to a range of modalities can be expected to impact on the intra- and interpersonal processes of semiotic mediation, affecting an individual's ability to manipulate the de- and recontextualization of knowledge. That is to say, if knowledge in the originating or "from" context is typically realized in any one/combination of semiotic resources, and if the "to" context does not afford access to the same singular or combination of modalities, a barrier is constructed to accessing knowledge generated in "from" context. Both decontextualization and recontextualization are likely to be impacted by the challenges of access.

- None of this suggests that a text must be multimodal to be successful, or that recontextualized meanings can only be realized multimodally. Rather, the proposition asserts that categories with access and/or the ability to draw upon a range of semiotic resources have a greater

probability of successfully recontextualizing their knowledge, for they have more available options for realizing their meaning.

The second and third propositions test the theorizing against two separate groups'/categories' attempts at recontextualization: a) students and b) teachers. Here, the tests target the theorized text/context relations, emphasizing the contexts in which knowledge is recontextualized.

- Voice, rather than register, is chosen for examining the students' texts, for multiple registers may be enacted in any given classroom, the appropriate register changing with the context of situation. As detailed data specific to the context of production of individual students' texts is not available, it is more appropriate to evaluate students' attempts at recontextualization against the broader notion of voice.

- In the case of the teachers' texts, although the context of situation is new and therefore somewhat ambiguous, general understandings of the context were shared by all participants. Therefore, the more specific concept of register can be used in the theoretical tests.

Together, the three propositions address the core concepts of meaning and context, an assertion which can be further illustrated by considering their counterclaims:

- If realizations of recontextualized knowledge do not draw upon multimodal resources, or if the multimodality of a text cannot be shown to contribute to successful recontextualization, then the role of multimodality in the students' and teachers' knowledge mobilization efforts may not be sufficiently significant to support the theorized relation.

- If successful recontextualizations demonstrate a significant variance from the generally accepted voice/register, then the movement of knowledge from one context to another can occur without their approximation, and recontextualization does not demonstrate a significant dependence on voice/register.

- Alternatively, if recontextualized knowledge is rejected despite approximating a generally accepted voice/register, then the contribution of an individual's mastery of register to their ability to exercise agency in recontextualizing their knowledge is called into question.

The propositions thus go to the heart of what has been theorized, and stand as robust tests of the theorizing of knowledge. Data which supports or refutes the propositions will strengthen or require modification of the theorizing. It now becomes possible to consider the data used in the testing process.

The Empirical Data

It is worth noting, however, that observer-participant becomes critical: are we looking at language in context as outsiders, adopting the analyst's point-of-view (what we might call meta-subjectivity) or as interactants, adopting the perspective of those collaborating in semiotic processes (what we might call inter-subjectivity?) (Matthiessen, 1993, p.240)

Context is a central theoretical concept in this inquiry, as it must be in all research/theorizing of knowledge mobilization; however, in relation to testing the propositions against empirical data, context must also be addressed from a more utilitarian perspective. In this inquiry, the propositions are tested against data drawn from the SSHRC-funded study "Alternative Accountability." Thus, what follows is a description of the physical and digital geographies of the teachers' work within that study, a traditional overview of the research site, participants, data, and data collection procedures as they relate to the research conducted within the scope of the grant. The treatment of the grant's research design and data collection is admittedly light, as it is not intended to place the design nor the full scope of the data within any qualitative research tradition. It is the digital texts produced within the context of the grant that are central to the tests of theorizing, and the relation of the larger research activities to the texts becoming the basis for foregrounding or backgrounding aspects of the larger set of research activities.

Because of the importance of the on-line accounts to the theoretical tests, the overview begins with a brief description of the accounts, their purpose and construction. Next follows the brief treatment of the grant's research design. Then the system used by the teachers to author accounts of practice is elaborated upon, with particular emphasis given to the technological affordances which supported and constrained the teachers in representing their work. Finally, I describe my observer-participant status in the research design, system development, and data collection as it relates to the "Alternative Accountability" grant, a position more ambiguous than the analyst's perspective adopted for much of this theoretical inquiry.

Teachers' Accounts

During the period from November 2006 to April 2007, fifteen (15) teachers in the VSB chose to author public, digital accounts of their literacies practices for educational stakeholders using a server-based system developed within the context of the INE. The teachers shared a general understanding of the purpose for the accounts, that they were engaging stakeholders in an alternative form of accountability practice by offering information that might complement that provided by current, formal accountability systems (ex. Foundational Skills Assessment). The teachers had unlimited latitude in interpreting practices that fell within the scope of literacies, and in conceptualizing their audience. They were aware that groups of parents, community representatives, and administrators would be viewing and evaluating their accounts. They were also aware that their accounts were public documents, that they were not password-protected, and that they were therefore available to anyone with internet access. The accounts remain publicly available, references to the accounts made throughout this inquiry.

The accounts are multimodal. The system afforded the teachers the opportunity to construct texts that included alphabetic text[46], digital images, audio, and video in multiple combinations. The teachers were not compelled to use the full range of the

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[46] On at least one occasion, a teacher sought to include a non-alphabetic script (Chinese) in an account. Although a technical solution was found, the individual assisting the teacher in authoring the account chose to use pinyin. The reasons for the decision are not known, as the teacher was not consulted; however, to the best of her knowledge, factors other than the system's technological affordances led to the decision.

system's affordances, although in general terms the range of affordances was emphasized as teachers were trained and supported in use of the system. However, with perhaps one exception, the researcher was not involved in the selection of the literacies practices to be presented, in the selection of the semiotic resources in which the accounts were realized, in the selection of student work providing evidentiary support for the practices, or in the authoring of the accounts. Indeed, the lack of feedback during the authoring period was, at times, an irritant for more than one subject-teacher.

The texts are multilayered instances of attempts at knowledge mobilization, examples of students' and teachers' reversing the flow of pedagogic relations as initially theorized by Bernstein in the pedagogic device. Again, though neither a requirement nor a formal object of study[47], the teachers' selections of student texts give evidence of students' use of quotidian knowledge in their academic work. However, mobilization of teachers' knowledge was an explicit goal of the larger study, though Bernstein's theories had not been considered relevant at the time that the grant application was written. Subject-teachers understood that by authoring such accounts, they were altering how knowledge was generally produced for the purpose of educational accountability.

Research Design

Research Scope

The research design for the project "Alternative Accountability" reflects the three questions posed in the grant application:

1. In what ways can teachers and students use internet-based technologies to develop multimedia and multilingual public accounts of the students' literate activities, accomplishments, and development through an interactive knowledge exchange system designed to enable teachers to

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[47] It is impossible to state that within the many conversations among the researcher and subject-teachers, there was never a discussion about what students learn outside of school. Quite the opposite is true. The value of students' knowledge was referenced in formal and informal conversations about students, pedagogies, and research, although the frequency and context of the discussions is impossible to document. However, it was never an objective of the grant for the accounts to give evidence of students' use/recontextualization of quotidian knowledge. To the extent that the accounts give evidence of such, it is reflection of selections and beliefs of the participating subject-teachers regarding the value of such practices.

readily produce such accounts, which are intended to supplement traditional accountability measures (e.g., achievement score measures on standardized tests) in ways that add to our understanding of literacy? What factors facilitate or inhibit teachers' authoring of such accounts?

2. When teachers work with students to author accounts of their classroom literacy practices, what does this process contribute to the teachers' conceptions of literacy development; of multiliterate pedagogies that engage the full range of linguistic, cultural and social capital which children bring to school; and of the influence of the personal and cultural values that underlie their classroom teaching practice?

3. How effective do principal educational stakeholders including representatives of parent councils, local multicultural communities, social and economic leaders, and administrative and political decision-makers find these internet-based accounts in conveying the students' multiliterate accomplishments and achievement on a class-wide and individual student basis; increasing their understanding of classroom practices that contribute to those accomplishments; and engaging these stakeholders in democratic conversations around what we value in the development of literate citizens?

The data collected throughout the research period is capable of addressing these questions, at least to a large degree.

Research Context

The Vancouver School Board (VSB), a partner in the INE and the "Alternative Accountability" research grants, is the locus of the research, and the VSB and those individuals and organizations having a direct relationship with the institution define its participatory boundaries. The second largest school district in the Province of British Columbia, with 59,480 students in the 2006-2007 school year (Ministry of Education, 2007), the VSB serves an ethnically, linguistically and culturally diverse student

population, its schools located in some of the richest and the poorest Canadian neighbourhoods. The three schools which are the physical centres of the current project – Admiral Seymour Elementary (Seymour), Lord Byng High School (Byng), and Sir Matthew Begbie Elementary (Begbie) – were active participants in the earlier work, and contributed to the framing of the issues described in the second grant application. While not a statistically representative sample of the full diversity of the VSB's student population, the schools' students are a significant cross-section of the social, economic, linguistic and ethnic diversity that characterizes the VSB, and urban classrooms throughout Canada.

Data Collection

Research sites

The three schools participating in the study are distinct from each other in relation to the students that they serve. Seymour is an inner city school, drawing most of it multiethnic, multinational and multilingual student population from a nearby subsidized housing development. The school has a relatively high (roughly 14%) aboriginal population, but no one ethnic or language group predominates. Spanish, Chinese (multiple forms), and Vietnamese are the three most common home languages among the more than 70% of students who speak English as an additional language (EAL). As a member of the Inner City Schools Project, the school is provided with additional staff to support student development as it relates to three goals: enhancing social responsibility, improving language acquisition-literacy development, and engaging parents and community in school. Inner-city schools also receive financial support from community organizations and businesses for school lunch programs, for transportation and other needs related to school trips, and for other community liaison projects. The school has a relatively small student population, approximately 175 students, divided between two buildings on the school's grounds.

Begbie, with more than twice the students of Admiral Seymour, is an East Vancouver school with a large population of students of East Asian origin, the majority of whom speak Cantonese as a home language. Multigenerational home environments are

common, and the school's catchment area draws students from diverse socioeconomic backgrounds, a sizable majority of parents employed in non-professional jobs. Like Seymour, more than 70% of the students in any given year speak English-as-an-Additional-Language, and a sizeable number of students attend an after-school Chinese (Mandarin) language program.

Byng is a "west side" school of roughly 1200 students, situated in an upper middle-class neighbourhood adjacent to UBC. With approximately 30% of students having a home language other than English and 18% formally designated as EAL, English is the home language of more students than many high schools in the VSB. In recent years, at least 60% of graduates have gone directly to university and more than 85% have pursued some form of post-secondary studies in the year following graduation. In addition to its mainstream high school programming, Byng is the site of the VSB's arts "mini-school", a separate program track which draws students from across the city and for which students compete for entry. The English teachers who participated in the study were all associated with an Arts mini-track program.

Research subjects

Two distinct classes of research subjects are included in the research design for the "Alternative Accountability" grant, the subject-teachers who are the authors of the digital accounts and the educational stakeholders who are their intended audience. Within the classification of educational stakeholders, the research subjects are further sub-divided based on the nature of their participation in the research.

Educational stakeholders

1. VSB Parent Advisory Committee (PAC) Members

Rationale for Inclusion

PAC members' values and opinions regarding literacies education, gathered using a written survey, served two purposes:

(i) The responses provided the subject-teachers with a preliminary context for their accounts, a general description of the understandings of literacies held by their key target audience as well as the sources of information parents drew upon in understanding the literacies' practices enacted within the VSB.

(ii) The survey responses act as a standard of comparison relative to the attitudes and values expressed by parents during the initial group interviews, providing a rough indicator of the representativeness of the comments of groups interview participants.

Selection and Recruitment

VSB PAC members, defined by statute as all parents with children attending a district school, were invited to complete a written survey regarding their conceptions of literacy and their current sources of information regarding students' literacies achievements. Principals of district schools were asked to include the survey as an agenda item at a regularly scheduled PAC meeting, and all PAC members attending the meeting were welcome to complete a survey.

2. Stakeholder Representatives

Rationale for Inclusion

Six groups of educational stakeholders, each group consisting of four to six individuals, were interviewed on two occasions to solicit their opinions regarding the nature of literacy and the value of the on-line accounts as a source of information about schools' literacies practices. The interviews were conducted before and after stakeholders viewed the accounts, in an attempt to gain insights into the impact of such information on stakeholders' opinions regarding literacies education. The breakdown of the six groups is as follows:

- Three groups of parents, one group for each of the participating schools. Potential participants were required to have at least one child currently attending the participating school/research site, but the child was not necessarily in a class taught by a subject-teacher.

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- Two groups of representatives of community organizations that actively partner with VSB schools: a) one group comprised of representatives of organizations with a direct interest in literacies programs and programming; and b) one group comprised of representatives of a broader base of community organizations. The community organizations from which representatives were drawn have connections to the research sites, but the schools are not the only populations they serve.

- One group of administrators and support staff from within the VSB, representing schools and central administration.

The stakeholders represent a significant cross-section of potential audiences for the digital accounts, and for information generated by formal accountability systems. Their opinions are the primary basis for evaluating whether such accounts serve as a viable form of alternative accountability, and whether research into such alternatives should extend beyond the exploratory stage.

<u>Selection and Recruitment</u>

The process for recruiting subject-parents reflected the patterns of school-parent communication at each research site. A notice containing information about the study and the opportunity for participation was circulated to parents using the school's regular communication media (i.e. print newsletter, weekly parent email, website, individual notice, etc.). Where appropriate, invitations were translated into the predominate languages of the local parent community. Subject-teachers also drew parents' attention to the study in face-to-face communication and in email, sometimes through an interpreter. Follow-up communication, whether answering questions or coordinating logistical arrangements for the interviews, were handled via email, telephone conversations, and face-to-face communication, sometimes directly with the researcher and sometimes through teachers/school liaison workers.

As the internal structures through which schools manage their relationships with external organizations vary considerably, lists of possible participants were solicited from multiple members of each school's staff. Community liaison team members, guidance departments, teachers, and the researcher proposed organizations with a potential interest in the information that would be provided in the accounts. Potential participants were contacted by phone or by email, with follow-up questions and logistical arrangements generally handled by email. Group interviews were conducted at the VSB Education Centre.

In consultation with Val Overgaard, Assistant Superintendent of Learning Services and co-investigator in the "Alternative Accountability" grant, it was decided to draw administrative representatives from the VSB's Assessment Committee, of which she was the chair and the researcher a sitting member. Again, individuals were contacted by email to determine their willingness to participate in the study. The interview was held at the VSB Education Centre.

Between 35 and 40 hours were devoted to recruiting group interview participants. No compensation or honoria was offered.

3. Teachers

Rationale for Inclusion

As indicated, the three schools which are the physical centres for the study participated in the INE, from which the current study is an outgrowth. Several teachers from the earlier study indicated an interest in continuing their involvement in the research agenda. These teachers form the core of the subject-teachers. Teachers at the three schools who did not participate in the previous research but who are interested in this study were also welcome to participate if they committed to authoring at least one on-line account. Fifteen (15) teachers, substantially more than the anticipated nine (9), participated in the study: three (3) from Seymour; seven (7) from Begbie; and five (5) from Byng.

<u>Selection and Recruitment</u>

Prior to the commencement of data collection, one teacher at each school was asked to serve as focal teacher for the study. In selecting the teacher, consideration was given to their participation in the previous research study, their willingness to serve as a coordinator for communication between the researcher and other subject-teachers at the school, and their availability for reflective conversations regarding the authoring process. Although classroom observation was offered to all study participants as requested and as time allowed, the classrooms of the three focal teachers were the primary loci for such activities.

Data

The central component of the data set is the on-line multimodal accounts of literacies practices authored by the subject-teachers. The accounts are evidence of the multimodality of the classroom pedagogic texts, including students' recontextualization of quotidian knowledge, and the semiotic features of the register which subject-teachers' approximate in their messages/accounts. The observational and group interview data, can be drawn upon to support, question and/or refute the evidence which the accounts provide in support of three propositions which guide the analysis.

Surveys

The survey consisted of forty statements related to literacies and literacies education to which PAC members indicated their degree of agreement or disagreement using a 7 point Likert scale. Several questions requesting basic demographic information such as number and grade levels of children within the VSB, level of education, and first language learned constituted the final section of the survey.

A package of surveys was distributed through the VSB's internal mail systems, with each package including the following:

- A cover letter to the principal explaining the nature of the study and requesting that they place the survey on the agenda for the next PAC meeting.

- Surveys, including Chinese, Punjabi and Spanish translations.

- A return envelope, addressed to Val Overgaard, for the completed surveys.

At most schools, an elected PAC executive conducts monthly meetings attended by parents, the school Principal and other school representatives, with the size of attendance varying considerably by school.

Accounts

The on-line accounts take the form of multimodal texts employing a variety of image types, video, audio, written text, hyperlinks, and combinations thereof. Though the final form of the teachers' accounts is constrained by the technical affordances of the system, the number and content of the accounts, as well as the modalities they employ, were at the subject-teacher's discretion. The participating schools were provided with a scanner, digital audio recorder, and digital camera to ensure that subject-teachers had equal access to hardware, and that their representational choices were not limited by their inability to access such equipment. As well, each school was provided with $500 to spend at their discretion on materials and/or equipment related to authoring accounts.

All aspects of the authoring process, conceptual and mechanical, were completed by employees of the VSB. The researcher was involved in neither the authoring choices nor digital production of the accounts.

The accounts were digitally archived approximately every two weeks.

Group Interviews

The three groups met at the appropriate school and/or at the Vancouver School Board main office at a time and date convenient for the research subjects.

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The semi-structured interview guides used in the group interviews drew upon the criteria for establishing the feasibility of the accounts (see Appendix A). Each session lasted between sixty and ninety minutes, and was audio-recorded. Where appropriate, translation was provided.

Classroom Observations and Teacher Reflections

Classroom observations as well as audio/photographic data collection methods were used to document teachers and/or students engaged in multiliterate activities. Between fifteen and twenty hours of observation were completed in each of the focal teachers classrooms, the observed classes selected in consultation with the subject-teacher. Every attempt was made to observe classes and subject matter that later became the basis for an account. As observational data, these materials provided a basis for engaging teachers in reflective conversations regarding their literacies practices and can support further analysis of the accounts; no images of students or student work are analysed other than that contained in the accounts. Individual and/or group interviews/reflections, emails, recordings of planning meetings and data from teachers' audio-recorded reflections provide further insights into the teachers' decision-making as it relates to the authoring of the accounts, and the factors that facilitated and/or impeded their representational choices. The unstructured interviews/reflections center on the events of the preceding lessons.

Timeline

Each step of the data collection process involves two discreet sets of activities, one connected to the authoring of accounts of literacies practices and a second to the views and opinions of educational stakeholders.

Phase 1 – System Familiarization/Baseline Data

Authoring of Accounts

- Participation of subject-teachers was finalized at three research sites. Required UBC and VSB subject consent forms were explained, distributed and returned.

- Subject-teachers at three participating schools received group and one-on-one training in system use. Sessions conducted at each school, and follow-up assistance provided to individuals requesting further support. When possible, individual and/or group follow-up sessions were audio recorded.

- Teachers began to author accounts.

- Classroom observations and audio recording of the three focal teachers began. When teachers' schedules allowed, post-observation debriefing discussions were also recorded.

Educational Stakeholders

- Surveys were distributed to VSB principals with a request for surveys to be circulated and completed at Parent Advisory Committee meeting. Returned surveys were entered into SPSS and preliminary analysis shared with subject-teachers.

- Participants were solicited for first series of group interviews, and initial group interviews were conducted at schools and VSB main office.

Phase 2 – Publication of Accounts

Authoring of Accounts

- Teachers began to take accounts public. On-going support provided when technical problems were encountered.

- Classroom observations continued. Attempts were made to align observations with content that would be included in on-line accounts.

- Group interviews with focal teachers commenced.

Educational Stakeholders

- Stakeholders reviewed accounts at time and place of their choice. Inquiries addressed through email.

Phase 3 – Reflections on Accounts and Authoring Process

Authoring of Accounts

- Authoring of accounts ended and final accounts were taken public.

- Group interviews with focal teachers completed.

Educational Stakeholders

- Second series of group interviews scheduled and completed.

Ethics and Consent

The Vancouver School Board is an active and supportive partner in the SSHRC-funded study "Investigating Alternative Accountability as a Viable Measure of Expanded Notions of Literacy," from which this thesis draws. Approval for the study was received from the VSB Research Committee prior to an application being filed with The University of British Columbia's Behavioural Ethical Review Board (BREB). Included in

the approval was clarification on teachers' use of student work in their accounts of practice. Given that the selection and form of the use of students' work was at the discretion of the teacher, it was agreed that digital accounts are equivalent to in- and out-of-school displays of student and classroom activities (i.e. bulletin board and lobby displays, public library exhibits, mall exhibits, television coverage, etc.), and that the rules governing such use of student work would apply. Thus, only the work of students who signed and whose parents signed a VSB Media Release Form for the 2006-2007 school year, or whose work had been previously publicly circulated and the appropriate media release obtained, was used in the accounts. The responsibility for ensuring that signed media release forms have been obtained resided with the subject-teachers.

Consistent with the BREB policies, written consent was obtained from subject-teachers and community members who agreed to participate in the group interviews, with withdrawal from the research possible at any point during the study (see Appendix B). PAC members were advised that completion of the written survey indicated their consent to participate in the study.

The Software System

The Research Site

The accounts authored throughout "Alternative Accountability" project exist as components of the "The Multiliteracy Project" website (http://multiliteracies.ca), itself generated using software developed in conjunction with the INE. The software was developed with funding from the INE and two subsequent SSHRC dissemination grants. Originally conceived by John Willinsky as a means for researchers to disseminate the INE's output to multiple audiences, development of the initial system was discontinued in December 2004 after proving to be technically infeasible (Early, Cummins & Willinsky, 2002). Subsequent to the reconceptualization of the internal relations and functionalities, a new system began development in January 2005, received final testing at Vancouver schools in the late spring of 2006, and was completed by August of that year. A student programmer-analyst continued to be available throughout the research period to provide technical support and to respond to teacher requests, typically queries regarding file formats or retrieval of material inadvertently deleted.

The website, hosted on a server managed by the UBC Education Library, is public, and could be accessed by teachers and students for authoring from any location with internet access. In effect, the site is the digital terrain or geography of the inquiry. The public face of the system is indistinguishable from any website, the information offered in multiple combinations of linguistic text, images, audio, and video. Projects from the INE, almost exclusively authored by university researchers, existed as site content, though not formally part of the research. Similarly, a "Comments" function and a discussion board, components of the software and website, were not employed, although the functions were operable.

Site Organization

The system's organizational hierarchy is relatively flat and non-linear, the system automatically generating internal hyperlinks, as well as affording opportunities to create additional internal and external links. The flow chart in Figure 1 illustrates the central units of The Multiliteracy Project site, the public face of the content in the system:

Figure 1. Structure of the Multiliteracy Project Website
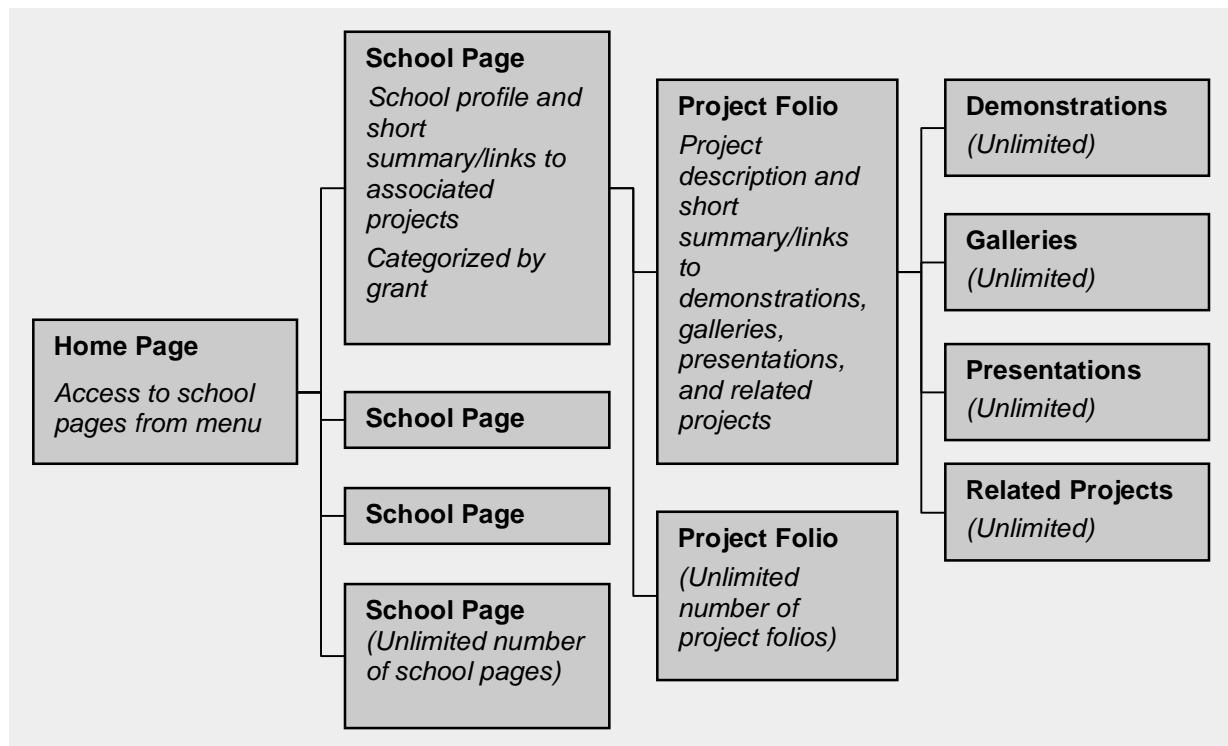
Schools are the primary unit of organization, and the School Page includes links and a brief summary of all projects generated at that research location. The projects are grouped according to the grant with which they are associated, with the "Alternative Accountability" projects placed at the top of the School Page for easier navigation by the educational stakeholders evaluating the accounts. Within each grant, projects are initially listed in order of the date they were created, but can be "drag and dropped" into new arrangements by the authors.

Figure 2. Project Folio (Cropped) – Field Trips, Admiral Seymour

Project Folio

Title
Field Trips

Collaborators
Jeannie Kerr

Schools
Admiral Seymour Elementary

Languages
English

Grades
4/5

Last Modified
June 17, 2007

Description
Real world experience is pivotal in helping students make connections, build vocabulary and conceptual understanding, and stimulate further interest. In addition, it brings joy to learning. This account documents the students field trip experiences and learning connections.

Demonstrations

Field Trips
Field trips provide the opportunity to connect abstract classroom learning to real-world experiences. The importance of field trips cannot be underestimated. If students are able to make real-world connections to classroom learning, the learning takes on significance, and directs the students attention and engagement. If the students are...
Read more: Overview

Galleries

Capilano River and Hatchery
Students attended an in class presentation by the NorthWest Wildlife Preservation Society and a visit to Capilano River. The students learned more about Salmon and sustainable practices to help salmon. This trip was connected to literature read...
View Gallery

Capilano - Connections
Students created major projects connected to the experience at Capilano. Students recreated the local Vancouver landscape and inserted the dangers to the salmon population in their drawings. The students wrote a paragraph on each major threat to...
View Gallery

Great Canadian Shoreline Clean-up
Students participated in an International Project to collect and document shoreline pollution. The students cleaned a 2km segment of Burrard Inlet at Vanier Park and analyzed and reported the data to an international body for inclusion in the...

Clicking on a project link takes a reader to the project's folio. Figure 2 is a screenshot of the project folio for the "Alternative Accountability" account "Field Trips" (http://multiliteracies.ca/index.php/folio/viewProject/220). The summary information on the left-hand side is input using an on-line form, and all fields must be completed to generate a project. Beneath the summary information are links to the project components, organized by type of component: demonstration, gallery, and presentation. As with projects, components are initially listed by date created but can be reordered by the author. The menu on the right-hand side of the folio is automatically generated by the system, and includes links to the components/texts which comprise the project.

Project Components

The system affords authors three types of textual arrangements for presenting their work: demonstrations, presentations, and galleries[48]. *Demonstrations* are web pages within which an author combines any or all of linguistic text, images, video or audio to provide an account of their practice. It is the only component into which video may be incorporated. A demonstration may include one or more pages, the automatic links between pages appearing as breadcrumbs in the upper right-hand corner of a page. *Galleries* are a collection of images, scans, photos, and/or digitally-generated text, which include minimal annotation. Galleries take one of two forms: a) a page layout of image thumbnails, similar to the layout now used by sites such as Flickr, with full-scale views of the image accessible by clicking on the image and b) Flash-generated books which mimic the page-turning properties of physical books. *Presentations* are audio-image Flash presentations, a series of images accompanied by audio/narration as well as optional image annotations. In some accounts, teachers and/or students chose to create presentations without audio tracks.

The software automatically generates a right-hand menu that contains links to all components in a project. Links to other site locations can be added to the menu by the author.

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[48] Site visitors will notice a fourth classification "Studies." The technological functions of Studies are identical to those of Demonstrations; however, studies are intended for readers with academic interests. Studies were not authored in the "Alternative Accountability" project, although the participants in the group interviews not infrequently commented on them.

Authoring

The system's functionalities offered an untrained author relatively unique affordances for generating multimodal text. Thus, it was the authoring functions, rather than the public presentations of the accounts, that created the possibility of investigating alternative forms of accountability/knowledge mobilization. A cursory familiarity of the authoring process/options will assist in understanding the multimodal relations analyzed in the theoretical tests.

All teachers who participated in the "Alternative Accountability" grant began as Project Managers, the basic level of permissions, which gave any author full control to create, edit, and delete. For a teacher, the process of creating a project began by inputting summary information into a one page form. After clicking "Create Project" at the bottom of the page, the author could begin creating a project, choosing to include one or more of any of the optional project components. Projects remained private – that is, not visible to the public – until an author checked a box taking the project public. Projects could be edited, revised, added to, or deleted at any time by the author(s).

Images, either scanned documents or photos, as well as audio and video files were the evidence which teachers provided to illustrate and demonstrate the efficacy of their literacies practices. Each project within the system has a separate storage area for such project-related files, and teachers placed files into their storage area using the Upload Manager, using a) a process similar to attaching a file to an email or b) a process similar to using a FTP. Figure 3 shows the top half of the Upload Manager page for "Field Trips", and a subset of the stored files for the project.

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Figure 3. Upload Manager – Field trips, Admiral Seymour
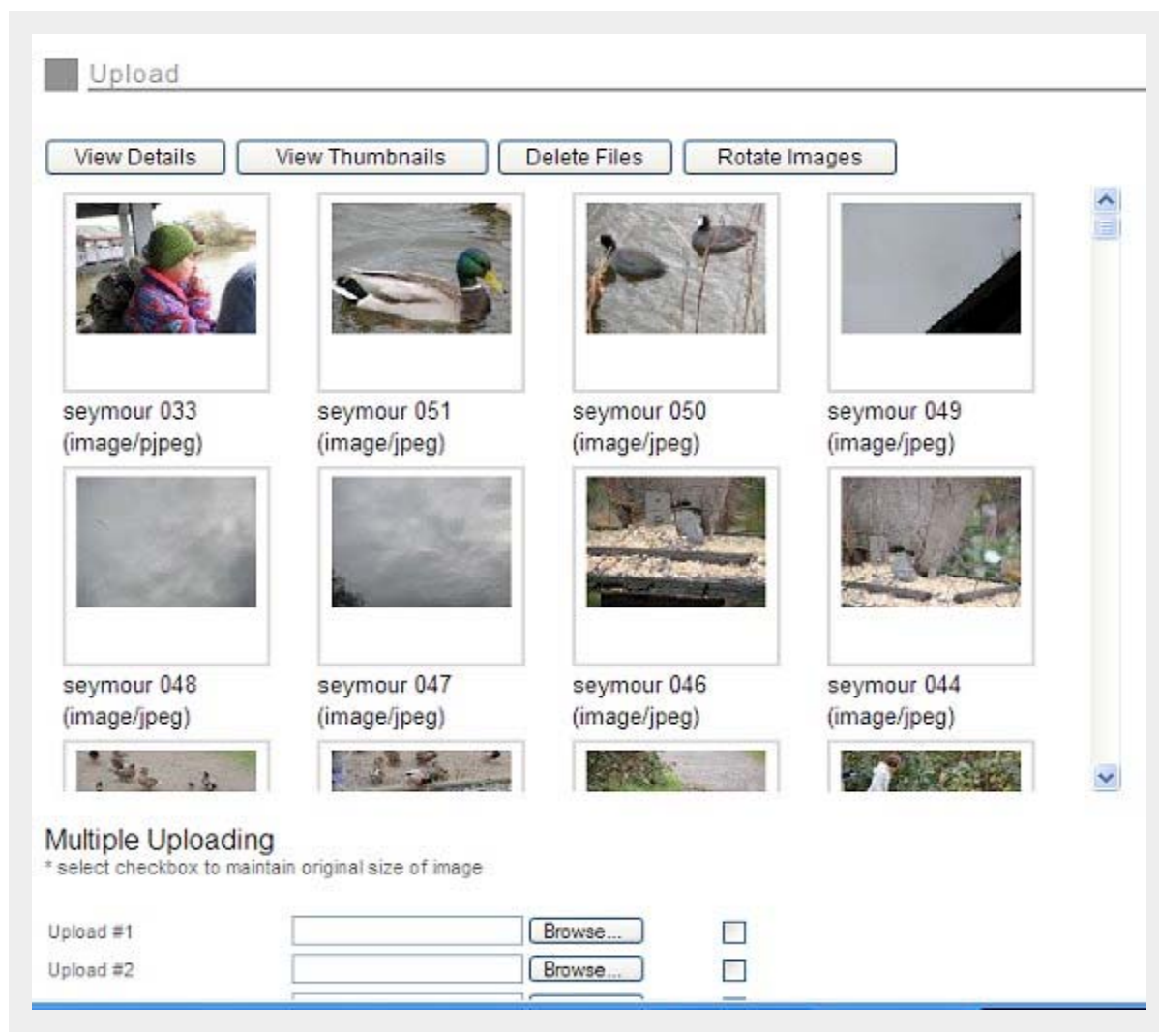
Galleries and presentations could include digital images but not video. A gallery was the simplest component to assemble. After completing a short form, which included a project summary, the teacher or student would select from the Upload Manager the images they wished to include. The gallery was complete once the "Save" button was hit. The creation of a demonstration was similar, but included the option of including a linguistic description for each image. Authors could a) use a single audio track, in which case the system evenly divided the total playing time across the number of images, or b) insert a unique audio track for each image. Each presentation could include up to three

separate sets of audio tracks for the entire presentation, affording the authors the possibility of including audio tracks in multiple languages or from multiple perspectives.

Demonstrations presented authors with the widest range of modal resources. After completing the set-up form, the author was presented with a web editor or WYSIWYG[49], offering the same document options available within wordprocessing software but more multimedia functionalities. Within the system, styles were standardized to ensure a common look-and-feel throughout the site. In addition to the functions available for inserting tables, chart and hyperlinks, all content available in the Upload Manager could be inserted into a document. Pages within a demonstration initially appeared in the order they were created, but could be reordered using a drag-and-drop function similar to the one used to reorder projects. Authors whose permissions were upgraded to the level of Cross-Project Manager could draw from the Upload Manager of any project they had authored and/or were given access by the author.

All teachers who participated in the research committed to completing one project; the composition of the project was at the teacher's discretion. By April 30, 2007, forty-four projects had been completed, of varying degrees of complexity.

Selves in the Thesis

A particular obligation placed on graduate students is that of placing themselves within the research. Regardless of the linguistic tricks that might be employed, a thesis is the act of an individual author and the author, with the approval of their committee, retains control of the form taken by the ideas, the theory brought to bear on the empirical data, and the representation of the people who are the education system and its stakeholders. Throughout this inquiry, the conscious selection and use of "subject-teacher" reflects the position entailed in agreeing to participate in a research project whose outcome is a doctoral thesis, a responsibility which the Tri-council Policy requires of me to never lose sight (Interagency Secretariat of Research Ethics, 2005).

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[49] WYSIWYGs or what-you-see-is-what-you-get are HTML editors whose interface resembles that of wordprocessing software. Although used in a variety of software applications, they may be most familiar to readers as wiki interfaces.

But the pretense of the individual author is never more false than in this thesis. The subject-teachers and the people with whom they work – the students, parents and community members who shared their thoughts and reflections - are as much authors of this thesis as me. As a wise group of students from Division Funteen once pointed out, their voices, thoughts, and ideas are the data, and thus their judgements and opinions must be treated as credible contributions, as credible as the adult and academic voices which subsequently shape the data, for to believe otherwise challenges the very foundation of the research (Potts, Moran & Begbie Students, 2005). In the work of the "Alternative Accountability" grant and in this thesis, three teachers - Amy Hughes, Jeannie Kerr and MJ Moran – are central authors of accounts and therefore of all work which builds upon/from them. In Appendix C, these teachers have responded to my request to "write me", and have provided their accounts of the researcher in the research, an attempt to counter-balance the control a thesis provides me over how I choose to represent myself.

A final person who shares authorship, and who I will recognize here because her contribution is everywhere in this thesis but never in a manner that is obvious, is Val Overgaard, Assistant Superintendent of Learning Services at the Vancouver School Board. Throughout the original grant and this subsequent research project, there are far too many occasions for me to count when a request was quickly answered and acted upon. I suspect that Val may underestimate her contribution to this work, but I never have.

But I have no illusions regarding the control I maintain, nor the primacy of my authorship in the collected authorings shared here and elsewhere. A thesis cannot be written as a "we", not the "we" of collaborative authorship. And, because the theorist is always in the theorizing and the researcher is always in the research, it is incumbent upon me to identify myself in the design and data of the two research grants. At the level of design, in 2001 I was involved in researching and writing the "Letter of Intent" for the initial INE application; subsequent to that, I was a primary author of the initial SSHRC Dissemination Grant application, and the sole author of the second such grant application, both of which received funding. I played a significant role in authoring the "Alternative Accountability" grant application, creating and writing the research design, as well as

authoring and editing sections of the rationale, literature review, and connections to previous research. The grant application, explicitly designed to bridge the INE and future research endeavors of the investigators and their organizations, focused on a sub-set of the issues raised during the INE. In the course of the two grants, I have worked in six schools, conducted research and/or supported the work of twenty-five (25) teachers and four (4) student-teachers who chose to participate in the studies, and had the honour of sharing with students named and unnamed their ideas, work, and evaluations of the literacies practices in which they engage in school. As manager of the Vancouver site of the INE, I supervised and hired all but one of the student programmer-analysts who built the open source software system used by teachers to author their accounts; hired and supervised a graduate student in journalism to produce project newsletters and information brochures; supervised the graduate student who interviewed a cross-section of INE teacher co-researchers about their assessment practices; authored the INE's mid-term review; hired and supervised three undergraduate Education students who transcribed, organized and indexed data for the project; liaised with representatives of other INE research sites; and performed a range of administrative and communication functions related to the project's on-going operation. In the context of the "Alternative Accountability" grant, I wrote and managed the distribution of the PAC survey, inputting the results into SPSS; recruited stakeholders for participation in the group interviews, and organized and conducted the twelve sessions; worked with all but one of the subject-teachers, providing training and support in use of the system, and conducting the various forms of data collection described earlier. For much of the work of the two grants, I cannot conceivably describe myself as taking the analyst's position and present myself as outside the work.

The obligations, real and imagined, to the objectives of the INE and the "Alternative Accountability" grant have taken me away from my central research interest, the affordances of digital spaces for language learning and language learners, but the thesis is nonetheless infused with interests that are as much a part of my day-to-day decision-making as they are my current and intended professional life. In the first class of my Masters studies, I asked Margaret Early where research met practice in Education. She looked at me and replied that that was a very good question and that she was going to

have to keep her eye on me. When my current committee met for the first time in September 2006, Bonny Norton and Geoff Williams asked me what I was interested in. Without hesitation, I answered that I was (am) interested in issues of agency, of how we might afford individuals the capacity to move across and among their chosen contexts, and how inside-outside relations are addressed at the level of the micro and the macro (though this last point was not phrased quite so concisely). In recommending that knowledge mobilization act as the third theoretical leg of the "Alternative Accountability" grant, I was seeking space for something that might sit with rather than become subsumed by the control function that is accounting, accounts, and accountability, my core interests again revealed in my attempts to develop the relation between the two concepts. The interest in language is an outcome of these larger interests, not the reverse. Inside and outside, barriers and opportunities are central to what I have and will do. The reader will recognize these themes throughout the work.

The "me" in this inquiry is the person who was privileged to work with people who care and who were willing to devote time to trying to make something better. "Me" got to be part of "we", and this is ours. However, the on-line accounts are "theirs", the work of the teachers - their topics, their teaching, their students and classrooms, and their authoring. There are traces of me in the software and the training, but in respect to the accounts, the outside position of analyst is one I may justifiably occupy.

Testing the Propositions

In theorizing knowledge mobilization as a process of recontextualization, and in asserting the relevance of multimodality and register to recontextualization, the three propositions are left open to testing through an examination of the text-context relations. More specifically, by examining the register of selected texts, at various levels of delicacy, in relation to the acceptance and/or value of the text to its intended audience, the validity of the propositions can be assessed. Propositions 1 and 2 can be tested against student texts embedded within teachers' accounts; Propositions 1 and 3 may be similarly assessed against the teachers' accounts themselves. Before proceeding, this requires an explanation of how texts are selected and how they are analyzed.

Data Selection

Student Recontextualization

Student texts/messages

The three student texts selected for analysis unambiguously draw upon the students' quotidian knowledge; that is, either the semiotic resources employed in the realization of meaning and/or the knowledge realized in the text was not acquired in the current classroom nor, to the best of the teachers' ability to ascertain, was it acquired in a previous public school classroom. Each of the selected student text(s) is taken from one of the focal teachers' accounts, ensuring that the selected texts represent students of different ages, grade levels, and socioeconomic status. In selecting the texts, consideration was given to choosing work produced by students of different genders and different ethnicities/places of origin. Given the prolific authoring of the three focal teachers, there was little difficulty in fulfilling these criteria.

The students also represent a range of educational achievement, although for the purposes of this analysis it is not necessary nor is it appropriate to identify the students by the grades they achieved. While the texts draw upon a range of media/modalities, they fall within what might be considered the normal range of activity for the project/assignment, and they are typical of the quality of work produced by their peers. Such judgements are possible because the focal teachers included in their accounts examples of projects/classroom work from many if not all of the students, and are further informed by the researcher's observations of the classroom. The extent to which the texts conform to classroom norms has its own implications in relation to the propositions, which will be addressed in the analysis.

The texts were selected after April 30, 2007, when the accounts were finished. During the authoring period, updates to the site were read almost daily, never less than five times a week. To select the texts, the majority of the accounts authored by the focal subject-teachers and/or their students were skimmed again, and the student work embedded within the accounts considered against the selection criteria. Screenshots of possible non-audio, non-video selections were captured, and placed in a separate digital

file; texts realized wholly or partially in audio or video were noted. The final selections were drawn from the subset, again with reference to the selection criteria.

Voice of the category

Proposition 2 asserts that students' recontextualization of quotidian knowledge must approximate the category's voice, and here the context for the students' work can be construed from the subject-teachers' description of their pedagogic practices, represented in their accounts. To establish the category's voice, the category being student-in-the-class, the accounts were reread several times to locate texts which explicitly and implicitly framed the category in relation to: the educational priorities and/or academic expectations of the category, as described by the teacher; the interpersonal relations of the classroom, as realized within the texts; and the learning practices of the classroom, as expressed in teachers' representation of their pedagogies. Each classroom is treated as a separate context, the voices individuated.

Success indicators - Students

The success of the students' recontextualizations of quotidian knowledge is assessed by comparing the register of the message to the voice established for the category. No additional data is required for assessing the students' success.

Teacher Recontextualization

Teacher texts/register

Teacher accounts are attempts at the recontextualization of pedagogic practice, created for the purpose of mobilizing knowledge for educational stakeholders. The objective of analyzing these texts is to describe variances in their registers, thereby enabling analysis of the impact of register on the success of the knowledge mobilization efforts, and testing of the propositions. Remaining consistent with the definition used throughout this inquiry, each account is approached as a text; however, the accounts' complexity and scale renders text an inappropriate unit of analysis. Instead, selections are made from within and across texts/accounts, surveying a range of registers used by each teacher. All selections were made from accounts authored by focal teachers. Again,

the selections were made after repeated readings of the accounts, and selections deliberately represent different levels/components of texts. As all accounts were multimodal to a greater or lesser degree, multimodality was not used as a selection criterion, though multimodal elements are analyzed as a component of register. Rather, the linguistic elements received greater attention in selecting samples for analysis.

In the original "Alternative Accountability" design, the intention was to analyze stakeholders' responses in relation to the account stakeholders had accessed. However, more teachers participated in the study than anticipated; teachers authored significantly more accounts than anticipated; and some accounts are significantly lengthier and more complex than anticipated. As well, many of the accounts were made public in the week leading up to the April 30, 2007 deadline, making it unreasonable if not impossible for stakeholder subjects to "read" the entire site before the second round of interviews. The sheer volume and complexity of the site and accounts make it difficult at times to establish account/response correspondence. However, when possible, consideration was given to selecting accounts on which stakeholders commented.

Context of situation

The context for the teachers' accounts arises from the purpose of the research, and the shared understanding of purpose is reconstructed from the formal and informal communication between the researcher and teachers, and between the researcher and group interview participants. Throughout the course of the "Alternative Accountability" study, every effort was made to maintain a consistent message about the purpose of the research, regardless of the nature of subject's participation. Some variation in informal communication is inevitable, and the variation that occurred in face-to-face communication with and between research subjects is impossible to document in an inquiry of this nature. However, recruitment flyers, text from emails, and selections provide an indication of how the purpose/context was presented, and the consistency attained.

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Success indicators - Teachers

The success of the teachers' recontextualizations of their pedagogies and thus the viability of the accounts of their literacies practices, is assessed by comparing the registers of the text selections to stakeholders' evaluation of the accounts, as communicated during the second set of group interviews. The method of analyzing the group interview data is described below, but it is noted here that a comprehensive analysis of the responses is not the purpose of the inquiry. Rather, for the purpose of testing the propositions, and thus the concepts and relations of the theorizing of knowledge mobilization, transcripts were sampled for evidence of the impact of register.

A preliminary "coding book" was created, the categories reflecting the propositions, pre-existing knowledge of the data resulting from participation in the group interviews and their transcription, and the conceptual categories of register. The term coding book is marked with quotation marks to indicate a qualitative difference between the book developed, and the concept of coding book frequently employed in content analyses, for the data was not coded (see for example Krippendorff, 2003). Rather, in the repeated surveying of the transcripts, the data was examined for the presence of categories of meaning. A full copy of the six interview transcripts was printed.[50] Scanning the transcripts, the preliminary categories were evaluated for relevance and comprehensiveness. A revised coding book was produced, the categories classified, sorted and sub-divided. Within each classification, the categories were colour-coded and the sub-categories assigned an alpha value (see Appendix D). Case codes/attributes were assigned numeric values. Approximately twenty-five pages of the administrators' transcript, selected because it contained the most atypical data, were marked using the revised coding book. An additional set of transcripts, roughly twenty pages of parent interviews, were marked for context/text categories. When appropriates, notes were made to refine and clarify the categories.

Then, employing a process similar to that used with the accounts, the transcripts were read and reread to select sections for analysis. Potential selections were marked in the margin with a highlighter. Positive and negative evidence was marked; that is,

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[50] A copy of the interview transcripts is available from the author upon request.

selections which supported and refuted Propositions 1 and 3 were sought. The selected sections of transcripts were reread and further reduced, and then reread again before the final selections were made. The process can be characterized as a continuous narrowing, a refining and reduction of categories, sub-categories and analytical points that would be raised in testing the propositions.

Data Analysis

Within this inquiry, theories of social semiotics, linguistics and visual grammars have been drawn upon to conceptualize meaning-making as a social process, the semiotic resources of language and other modes made and remade in patterns of contextualized meaning (Halliday, 2004; Halliday & Hasan, 1985; Halliday & Matthiessen, 1999, Hodge & Kress, 1988; Kress & van Leeuwen, 1996/2006). These theories also provide the analytical tools required for examining the identified texts, and for evaluating the propositions that have been put forward. Evidence of text/context relations is realized within the texts' lexicogrammar and open to analysis at increasing degrees delicacy, lexis considered the most delicate level of analysis. The "gross" meanings realized in grammatical relations as well as the more delicate will be drawn into the analysis.

As register is central to the analysis, it is useful to briefly revisit the concept, expanding on its analytical possibilities before proceeding. An individual's lexicogrammatical choices indicate their construal of and capabilities within the context; that is, the individual's choices reflect their understanding of the ideational, interpersonal and textual meanings which are appropriate/effective within the context, as well as their capacity to draw upon the afforded semiotic resources. A text's register, then, is also a reflection of an individual's competence in relation to the context's recognition and realization rules; a demonstration of the power afforded a category's voice and of an individual's capacity to exhibit agency within the slippages that inevitably accompany the recontextualization of meaning. It is important to remember, however, that register is not a constituent of the systems of meaning as historically theorized in SFL by Halliday and Hasan (Matthiessen, 1993; see also Halliday & Hasan, 1985; Hasan, 2003). Rather, register is metalinguistic theorization of patterns of use that employs the systemic

properties of language and other semiotic resources. The register of a text is simultaneously:

1. An instance of the potential of the semiotic system; and,

2. A realization of the stratal relations of meaning; and,

3. A functional variation reflecting selections made from the individual's construal of field, tenor and mode.

Though the lexicogrammatical analysis of the texts will focus on their functional variations, that register realizes these three systemic dimensions of language/semiotic resources allows for broader considerations of register's implications for knowledge mobilization.

To illustrate the approach to data analysis, it may be helpful to trace the process using one selection, a speech turn taken from the administrators' group interview. Here, more points are raised than are necessarily included in the analysis that follows, so as to supply the reader an understanding of the potential scope of a register analysis and the types of issues that were considered.

The interview began with a brief reference to an interview the previous day with another group, and with the comment that the participants' had wanted to "start with the accounts and what they wanted to do first was just talk about what they noticed, what they liked, just a first reaction to what they could see." Participants in the administrators' group were invited to begin in a similar vein. In this speech turn, a participant follows the first speaker, beginning by signaling agreement with the comments that have been made.

> *I agree I was totally impressed with the engagement of the Grade 8's*
> *poetry. You know "The Charge of the Light Brigade" I think might be one*
> *that you might have trouble engaging Grade 8's in if you were doing it in*
> *a traditional classroom-type manner and as (participant) said the format*
> *of posting it gives everybody a window into that classroom. You know as*
> *we walk down the hallways we sometimes will peek in the window but uh*
> *this is a window with sound and everything. You're basically sitting in the*

back of that classroom watching it and so for the greater community to have access to that is great.

In the analysis, selections were broken down into clauses, as in Figure 4. For this example, the verbal group has been underlined. Signaling solidarity with the previous speaker, also a school principal, the individual initially positions him/herself as the subject. By performing a desiderative mental process[51], the process of "agreeing", the speaker creates continuity between what had been previously spoken, and what they are about to say. The agreement positions the speaker's next statement as a repetition of what has already been agreed upon, even though there are notable differences.

The evaluation in Line 2 is implicit rather than explicit, the carrier of the relational attributive not an account, but rather the speaker, to whom the desiderative quality "impressed" is assigned. By nominalizing the process of "engaged/engagement", the speaker is able to extend his/her impressed state to the circumstance of the students' manner of working, not the students' work per se. Engagement, as noted earlier in the thesis, is a lexical item that appears frequently in teachers' and administrators' discourse within the VSB, an idealized level of involvement in learning. In situating her/his response in the circumstance of student engagement, the speaker has given evidence of a high evaluation, one recognizable to all within the room, without evaluating the student texts. With this, coupled with the agreement signaled in the first clause, the speaker's opinion is voiced without the appearance of judging, eliding the speaker's role in the institutional hierarchy.

Figure 4. Clause Breakdown – Administrator's group interview

1   I <u>agree</u>
2   I <u>was</u> totally impressed with the engagement of the Grade 8's poetry.
3   You <u>know</u>
4   "The Charge of the Light Brigade" <<I <u>think</u>>> <u>might be</u> one [[that you <u>might have</u> trouble [[<u>engaging</u> Grade 8's in]]]] || if you <u>were doing</u> it in a traditional classroom-type manner]]

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[51] Systemic functional linguistics (SFL), the lexicogrammar employs a different nomenclature from what might be considered traditional grammar, the nomenclature reflecting the differences in the conceptual categories as well as the concept of language. At the level of analysis pursued in this inquiry, the reader may consider the semantic category "process" as equating with the more familiar category "verb", although the reader will note the difference in the use of "process" and "verbal group" in the analysis.

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5   and as (preceding speaker) <u>said</u>
6   the format of posting it <u>gives</u> everybody a window into that classroom.
7   You <u>know</u>
8   as we <u>walk</u> down the hallways
9   we sometimes <u>will peek</u> in the window
10   but uh this <u>is</u> a window with sound and everything.
11   You<u>'re</u> basically <u>sitting</u> in the back of that classroom
12   <u>watching</u> it
13   and so [[for the greater community <u>to have</u> access to that]] <u>is</u> great.

The speaker's attenuation to relations within the interview context is also in
evidence, the minor clause "You know" in Lines 3 and 7 used to engender solidarity with
peers. "You know" evokes a sense of a shared perspective, and its first instance of use
precedes a projection, the thought that the "The Charge of the Light Brigade" might be a
difficult text in which to engage students (Line 4). The general sense of deferral
continues in the foregrounding of the poem's title within the clause complex, the
projection realized by an interrupting clause ("I think"), and is furthered by the low
degree of modality ("might be") assigned to the projected statement. The second minor
clause (Line 7) performs a similar function, the call to a shared perspective preceding the
shift in subject in Lines 8 and 9. "We" replaces "you" as theme/subject as the speaker is
placed among the group that shares in practices of "walking" and "peeking", seemingly
mundane processes which belie the status of the people in the room, as the material
process "walk" and the mental perceptive process "see" indicate a freedom of action not
afforded to other categories within schools. Thus, though the self-presentation obscures
the stances and privileges of the speaker, seemingly deferring to the competence of others
in the room, the speaker's competence and capabilities are asserted in the projected
clauses.

A semantic substitution occurs in Line 11, the theme/subject no longer the "you"
of others in the room, but a more generalized "you", the group of people who have access
to this window – the account – which affords the opportunity (and privilege) of sitting in
the back of the classroom. The substitution becomes apparent in Line 13, where the rank-
shifted clause takes on the thematic/subject position in the clause, the location at the
window now occupied by the greater community with access. In this, the final clause of

the speech turn, the speaker communicates her/his most direct evaluation of the accounts, the value of the access deemed "great."

Another perspective from which one might examine the speech turn is the constitution of the generic entity "account" or "site", the speaker's abstract category being somewhat unclear. However, what "it is" becomes apparent in the speaker's selection of participants and circumstances, typically the noun phrases and prepositional phrases used to reference and situate the ostensible interview topic. In only two of the fourteen clauses – Line 6 and 10 – do the accounts hold the theme/subject position, and in Line 10 this is accomplished through use of the determinative "this", although it is unclear whether "this" is an account, the site, or an element in either. In Line 2, the circumstance of the students' engagement is the students' poetry, the given/new structure of English thematic development later used in Line 4 to provide an example of a poem with which students might have difficulty engaging. However, the specific poem referenced, "The Charge of the Light Brigade", is an analogy, not a reference to an account or sample of student work.

In Line 6, the "format of posting" serves as the unmarked theme for the projected clause. Here, the speaker begins to develop a theme central to him/her, not the accounts but the format and what it affords. In projecting this theme into the voice of previous speaker, he/she has transformed the earlier emphasis on the perceptual processes of seeing and hearing in the context "of the classroom experience." The experience and processes are now embedded in the quasi-metaphorical window, which the format is described as "giving." Although the spatiality of the metaphor shifts to outside the classroom, the format "giving" a window into "that classroom" (in contrast to giving an experience), it is a window that "everybody" is provided. Interestingly, when the speaker returns her/himself to the shared subject "we," the spatiality of the reference is expanded to include hallways, suggesting "that classroom" (see Lines 6 and 11) is a classroom selected by the actor, not predetermined by the site. The afforded window is accompanied by "sound and everything" (Line 10), and it would appear that these accompaniments to the visual metaphorically return the "you," the "everybody", to the "back of that classroom" (Line 10), where perceptual processes ("watching" – Line 12) are central. "Watching" is new, a possibility introduced by the accounts' existence, the non-finite

contributing to the sense of limitlessness. In Line 13, the final clause of the speech turn, the speaker returns to the theme of access - greater community access to the space and its accompanying perceptions, realized in the rank-shifted clause "for the greater community to have access to that" – and it is access to which she assigns the attribute "great."

There is much more that might be said about the work being performed in this speech turn. However, there is sufficient information here to demonstrate how the speaker's apprehension of the context of situation might be construed from their remarks. First, there is the manner in which knowing is performed. The interpersonal relations of the context appear complex. The purpose for attending the group interview is to judge or evaluate the accounts. As the accounts have been authored by teachers, this implicitly if not explicitly involves judging teachers' work, the decision on whether to judge the teaching or the representation of the teaching equally available to the speaker. The speaker's authority to assess the teachers' efforts is further sanctioned by her/his position in the organizational hierarchy, a principal having considerable formal though not always practical responsibility for the pedagogical practices enacted in a school. The majority of the people in the room are organizational peers; the interviewer is a graduate student with no formal role in the organization. Yet the speaker's evaluation is frequently indirect: projected onto others in the room; communicated by speaker's desiderative state in relation to the students' poetry; warranted in others' knowledge of shared material and perceptive practices; reformulated in Line 14 not as a personal assessment but as a general statement of fact. If such relations were central to the analysis – and they are not – the remainder of the transcript might be examined for evidence as to whether evaluation and judgement are performed in a similar fashion by other interview participants, suggesting a common understanding of organization's interpersonal relations, or whether others perform knowing differently, in which case further consideration of the speaker's linguistic choices would be necessary. Relations to others in the room and/or to the teachers authoring accounts might be of interest, as would relations to the interviewer. However, these relations are not critical to the propositions being tested, and are of less interest to this inquiry.

What is of interest, and is introduced in this example, are the ideational relations realized in this speech turn, the constitution of an account and how educational

stakeholders describe their interaction with it. The spatiality of the participants[52] and circumstances, the window and the place in the classroom, contribute to an overall understanding of what stakeholders understand the website to be. Perceptual and cognitive processes are also implicated in this understanding, which positioned against the analysis of the accounts' registers allows for the testing of Propositions 1 and 3. These are themes to which the analysis will return.

This approach to discourse analysis is followed in the analysis of all three text "groups" – student texts, teachers' accounts, and stakeholder interview transcripts. Throughout, there is no attempt to exhaust the range of issues raised by the text selections. The focus of the analysis is the same as in selecting the text excerpts, the testing of the three propositions, enabling assessment and refinement of the theorizing of knowledge mobilization central to this inquiry.

Summary

To assess the explanatory potential of the theorizing of knowledge mobilization, the concepts and their relations, three propositions are tested. The propositions implicate two key dimensions of the theorizing related to the pedagogic device and, more particularly, the recontextualizing rule: a) the relative importance of the range of modalities to the mobilization of knowledge and b) the relevance of voice/message relations or register to the flow of knowledge across contexts. The propositions are tested against data drawn from the SSHRC-funded study "Alternative Accountability." The success of student recontextualization of quotidian knowledge is assessed by comparing student texts, one from each of the three focal teacher's classrooms, against the category's voice, as represented by the teachers in their accounts. The teachers accounts, authored using the open source software system developed in conjunction with the INE, are recontextualizations of pedagogic practice, designed as information for educational stakeholders. The success of the accounts is assessed in relation to stakeholder responses as expressed in group interviews. With all texts, student and teacher, the

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[52] Participant is a grammatical classification that may be roughly understood as the subject or object of a clause. Again, in SFL, classifications are semantic. Thus, the noun phrases which help to constitute prepositional phrases are not participants.

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lexicogrammatical and multimodal features chosen for analysis are consciously selected to test the propositions, positive and negative evidence equally sought.

RECONTEXTUALIZATION OF QUOTIDIAN KNOWLEDGE AND STUDENTS'

TEXTS

Student texts are an essential but not unproblematic basis for testing how knowledge mobilization is being theorized here. Texts, as the term has been consistently used throughout this inquiry, are instances of meaning made and remade, and from this we may derive the logical assumption that flows of knowledge between the contexts of students' lives will be observable in their work. This suggests that students' quotidian or non-school knowledge can be made evident through analysis of students' texts. But doing so requires the analyst to construe the original context of meaning – or, at the very least, to identify the original context as "not school" – as distinct from the more familiar task of construing the context of the text's production (see Hasan, 1999b). In those instances in which school and non-school meanings are relatively indistinct, such as when home/community has approximated the institutional voice of school, the construal of the originating context may (for all practical purposes) be impossible. Further, while the original context may be textually salient when quotidian knowledge is initially realized, perhaps in discussion or drafting, it may become less so as meanings continue to be reworked over the duration of a project or unit. The role of quotidian knowledge in the furthering of academic success is no less relevant as meanings and practices are refined, for learning is a reworking of meaning. Indeed, the initial theorizing of the relation of register to successful recontextualization would presuppose that reworking meaning renders the originating context less salient, as meaning is absorbed into a shared register. However, such understandings are of limited assistance in conducting the analysis.

The challenge is addressed by capitalizing on the relatively unique position held by teachers. As participants in the formal recontextualization of knowledge for which school is purposed, they more than most can identify volunteered meanings, meanings which may have been unanticipated and/or previously unrecognized, and which students contributed to a lesson or assignment. With their responsibilities for assessment, they also have formal responsibilities for evaluating whether students have succeeded in realizing meaning consistent with the student voice. Thus, though unsupported analysis of student texts on the research website might miss or misconstrue non-school contexts as sources

of meaning, consultation with subject-teachers has mitigated against such problems. Each of the student texts analyzed in this chapter was selected because the teacher agreed it represented recontextualization of quotidian knowledge.

If recontextualization and not successful recontextualization was the matter to be examined, the participation of the subject-teachers in text selection might pose a different analytical dilemma. It is not difficult to imagine a student bringing meaning to the classroom, only for the meaning to be discounted or denied validity (legitimately or otherwise) within the context of academic life. Success is a complicated term – subjective, contextual, contingent. But teachers' responsibility for assessment renders their subjective judgment a reasonable indicator of success, at least for initial consideration of the relevancy of multimodality and voice/register to such efforts. Thus, in relation to student texts, recontextualization of quotidian knowledge is taken as evidence of successful knowledge mobilization, and recontextualization is deemed to have been successful if the teacher understands it as such.

As recontextualization has been theorized as dependent on access to multimodal resources and the approximation of the category's voice (Propositions 1 and 2), establishing voice is the first step in the analysis of each text, preceding analysis of features of the text/message's register. Voice, as described earlier, is compatible with but not identical to register, the broader concept of voice a more general description of what is and is not sanctioned for a category. Here, the category is student-in-the-classroom, with each teacher recontextualizing the intellectual, social, and emotional requirements implicit and explicit in the curriculum, policies, and structures of British Columbia's education institutions to frame a distinctive voice for their classroom. In the analysis, student voice is construed from the teachers' accounts, their work examined for evidence of a) the priorities/expectations, b) the practices and c) the interpersonal relations assigned to the category student-in-the-classroom. Voice/message comparisons and assessment of students' success/failure in recontextualization are then possible by conducting a more delicate analysis of the students' texts/messages in relation to voice.

Thofiq's Project at Admiral Seymour Elementary

The Student Voice

Jeannie Kerr's Grade 4-5 classroom, located in the southwest corner of the main building of Admiral Seymour Elementary School, opens onto a hallway filled with the work of the classroom. Bulletin boards display students' texts; tables in the hallway can be used by individual or small groups of students needing a separate space to work. Immediately upon entering the classroom, one sees a carpeted area and sofa for reading and work, the adjacent array of books often including selections related to current projects and curricular themes. Behind the sofa sits a work area containing four internet-connected computers, bought with funds provided by the "Alternative Accountability" grant. A blackboard runs along the length of one wall, parallel to the wall of windows overlooking the playground. Materials and students' work-in-progress are stored on shelves and cupboards underneath the windows.

The central area in front of the blackboard is also covered with a carpet, a space where students not infrequently sit while engaged in mindfulness practices, whole class discussions, and/or small group work. Tables and chairs, between four and six students sitting at each table surround the space in a large "u". Student work, daily agendas, planning lists, posters, and more cover the wall space. Jeannie's desk is located diagonally from the door, in the back corner.[53] During recess and lunch, before and after class, small groups of students choose to remain in the classroom, visiting with Jeannie, finishing school work or a personal project, or visiting with friends. During and outside of classes, the space is relatively fluid, students up and moving to get resources or to talk with peers, movement that is limited by Jeannie only to the extent she observes students failing to make "good choices" regarding their own and others' learning.

The description presented here, as it will be in relation to the student voice of MJ Moran's and Amy Hughes' classrooms, provides the viewer with a sense of the multiplicity of these spaces, the choices allowed through the framing of the category's voice. The variations are not as simple as the variations generated by shifts in content

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[53] In the analysis of the student voice, I use the names by which the three teachers are addressed by their students.

areas, the changes in the ideational functions performed by language and other semiotic resources. Nor can they be adequately classified by bifurcating talk into the categories of teacher-student or student-student interaction. Within the time-space of the classroom, the physical and mental context shifts, merges, and subdivides, the privileged register varying with the immediate context of situation. In Jeannie Kerr's classroom, the recognition and realization rules are implicated in the "good choices" afforded among the shifting options, the register of students' texts/messages realizing their understanding, negotiation and competence in relation to the voice of student-in-the-classroom.

Educational Priorities and Expectations

> *I believe I have a responsibility to not only educate the minds, but also the hearts of my students. I want my students to look at knowledge in a connected and ethical way. This involves higher level thinking skills and a greater degree of personal self-understanding on an intellectual and emotional level than simply memorizing facts in various subject areas. This project takes a closer look at how I encourage students to attain greater self-understanding through providing opportunities for the students to consider who they are, and the types of lives the students would like to lead. This project also explores the ways in which I have encouraged students to connect knowledge to action in service to differing levels of community.*

<div align="right">

Project Summary
Educating Heart and Mind
http://multiliteracies.ca/index.php/folio/viewProject/262

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Across accounts of her literacies practices, Jeannie's educational priorities are most frequently represented in statements of her beliefs and desires, not expectations of students or the requirements of curriculum, institutions or society. Not all accounts explicitly address her larger priorities; however, her desires are central to the account "Educating Heart and Mind." The title, consistent with the project's opening summary,

reflects the responsibility she attributes to herself, a responsibility overarching all that is described in her accounts.

The voice of student-in-the-classroom is a function of her desires, desires presented as the activities/acts she wants and encourages of her students (see Figure 5). These are primarily acts of cognition - cognitive processes, nominalizations, or metaphors of such - acts of "looking at" or considering "higher level thinking," and "connecting knowledge." Indeed, despite the emphasis on heart and mind, Jeannie's accounts are dominated by mental:cognitive processes, the emotive subordinate to "understanding" in her desires of/for her students.

The singular importance Jeannie assigns to the students' relations to knowledge, however, belies the complexity of how such relations are constructed. Each element moves the student in, out, and through knowledge, cognition shading towards perception in "looking at"; perception shading to the material, a metaphorical doing, as knowledge is connected to action; the student above the immediate context in exercising higher order thinking skills and inside themselves in achieving a greater degree of self-understanding; the metaphorical movement of knowing continuing "through" opportunities for consideration of their present and future. These metaphorical stances to knowledge are contrasted with the "memorization of facts," the more congruent "know something" relation of knowing and knower. They may be further contrasted with the preponderance of English have/hold relations to knowledge - have, use, own, gain, secure, acquire – constructions Jeannie avoids in describing the relationship to knowledge that she desires for her students. These complex perspectives and practices of knowledge, Jeannie's desires for her students, are the priorities established for the category's voice.

Figure 5. Jeannie's educational priorities and expectations
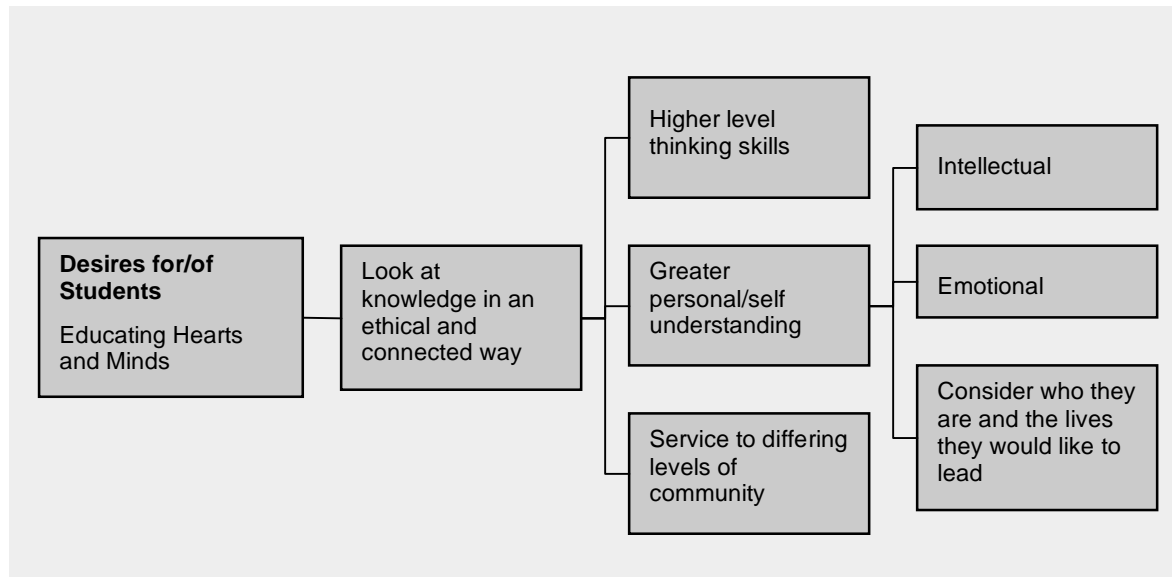
Practices

To a greater or lesser degree, the accounts that Jeannie authored alone and in conjunction with Melody Rudd are accounts of practices that encourage students to adopt the desired relations to knowledge. When practice is foregrounded, desires and beliefs fade to the background, and the emphasis turns to the behaviourial and material processes in which the students engage, the practical enactment of Jeannie's self-assigned responsibilities. Two selections are used to illustrate how practices of the student voice are built up in Jeannie's accounts.

Thinking

The first selection is taken from "Mindfulness", one of three demonstrations in the account "Educating Heart and Mind." Figure 6 shows the clausal breakdown with processes underlined. It is quickly evident that material processes predominate, as one might expect in a description of practice (see Table 2). Interestingly, many of these processes are actually metaphors for mental processes, the redirection in Line 4 being a redirection of thought, the "get" in the same clause describing a shift in mental state, and the movement described in Lines 5 and 12 a mental shift in visualization.

Figure 6. Clausal breakdown - Mindfulness

1   Our practice <u>started</u> | with [[<u>focusing on</u> the sound of a gong || and simply <u>turning</u> hands <u>over</u> || when the sound <u>disappears]]</u>.

2   From there we <u>focused on</u> [[<u>taking</u> 3 cleansing breaths]]

3   (which <u>was</u>) <u>followed</u> again by the sound.

4   Then <u>discussing</u> as a group [[how long we <u>were able to concentrate</u> on the sound and breathing || before <u>being</u> distracted]] and [[how <u>to redirect</u> purposefully and non-judgementally || when we <u>get</u> distracted]].

5   We <u>moved</u> to more complex visualizations throughout the year.

6   For example, <u>picturing</u> ourselves at recess [[<u>including</u> others in our play]].

7   I honestly <u>believe</u> from the feedback of the students

8   that this <u>was</u> too much and too complex a move.

9   The students <u>were sharing</u> lovely stories after the practice

10   which they <u>were creating</u> for discussion

11   and (they) <u>had</u> not actually <u>visualized.</u>

12   We <u>took</u> a step back with more concrete visualizations of a tree or flower

Educating Heart and Mind
Mindfulness
http://multiliteracies.ca/index.php/folio/viewDocument/262/12903

The non-material processes maintain the demonstration's central preoccupation with thinking. "Discussing" in Clause 4 identifies thinking and thinking-about-thinking as a matter of concern. The four behavioural processes are all near-mental – focusing on, picturing and visualizing. "Being" in Clause 4 refers to the same quality of distraction referenced later in the clause, and the relational attribution performed in Clause 8 describes the practical limits on the types of mental processes which the students can be expected to capably perform. The picture which emerges from the excerpt is a space in which students are increasingly expected to direct and control their thought processes, and are apprenticing in the ability to discuss such processes with others.

Table 2. Process types - Mindfulness

Practice (Participant)

Line	Material	Behaving	Sensing	Relational
1	started *[creative]* turning over *[transformative]*	focusing on *[near mental]*		
11				was *[intensive]*

We (Participant)

Line	Material	Behaving	Sensing	Relational
3	taking *[transformative]*	focused on *[near mental]*		
5			were able to concentrate *[cognitive]*	discussing *[circumstantial]*
6	to redirect *[transformative]*			being *[intensive]*
7	get *[transformative]*			
8	moved *[transformative]*			
9	including *[transformative]*	picturing *[near mental]*		
15	took *[transformative]*			
16	creating *[creative]*			

Students (Participant)

Line	Material	Behaving	Sensing	Relational
12	were sharing *[transformative]*			
13	were creating *[creative]*			
14		had not visualized *[near mental]*		

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Although thinking is arguably an expected focus in an account on mindfulness, it is a consistent priority within and across the written portions of Jeannie's accounts. However, the student practices described in this account are unique in several ways. Only here are the material processes, which dominate Jeannie's accounts of student practice, employed as metaphors and only here are the "texts" with which the students engage largely without material properties. Although the gong provides an initial sensory focus, the texts are, quite literally, thoughts – visualizations which are created and then navigated, moved to and stepped back from. The field of the discussions, as recounted by Jeannie, is also thought: "how long we were able to concentrate" and "how to direct purposefully and non-judgmentally." Only here are students described as encouraged to discuss thinking, to consider thinking as a practice. Thinking is key to Jeannie's representations of her classroom, but thinking's realization and the relation of thinking and text are not always as explicitly addressed as they are when students engage in mindfulness practices.

Creating and Connection

Creating and connection, often interwoven, are two further dimensions of the student voice privileged in Jeannie's accounts. The second is directly related to Jeannie's desires for her students' relation to knowledge; the first is the "doing" or creating of a connection. But the realization of these practices is quite different from the realization of thinking, as evidenced in the account "Field Trips."

Water acted as a transdisciplinary theme for much of Jeannie's teaching in the 2006-2007 school year, and field trips were an integral component of her pedagogy. The same-named account is the first to appear in the Admiral Seymour school folio. Upon cursory examination, the differences between this account and "Educating Heart and Mind" are the most apparent, the project summary for "Field Trips" containing no desiderative processes, no references to Jeannie's hopes for her students. Nor do Jeannie or her students appear as participants. [54] Instead, the abstract concept "experience" holds the thematic position, performing as the Carrier of the Attribute "pivotal", and as the

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[54] Throughout this chapter, "participant/participants" is used as a technical term, one of three components of the experiential function in SFL.

metaphoric Actor bringing joy. From an ideational perspective, however, closer examination reveals the two accounts to be complementary. Experience is pivotal because it contributes to making connections and to "conceptual understanding"/higher order thinking skills (see Figure 7); in other words, experience is prioritized for its contributions to Jeannie's overarching priority that students look at knowledge in a connected and ethical way. Connections are the true objective, and connections hold equal standing with experience in the final clause, the two serving as Values or identifiers of the Token "account." The account "Field Trips" is effectively an expansion of the ideas introduced in "Educating Hearts and Minds," a description of the practices Jeannie employs in contributing to her students' relations to knowledge.

> *Real world experience is pivotal in helping students make connections, build vocabulary and conceptual understanding, and stimulate further interest. In addition, it brings joy to learning. This account documents the students field trip experiences and learning connections.*

<div align="right">

Project Summary
Field Trips
http://multiliteracies.ca/index.php/folio/viewProject/220

</div>

Figure 7. Field trips – Contribution of experience
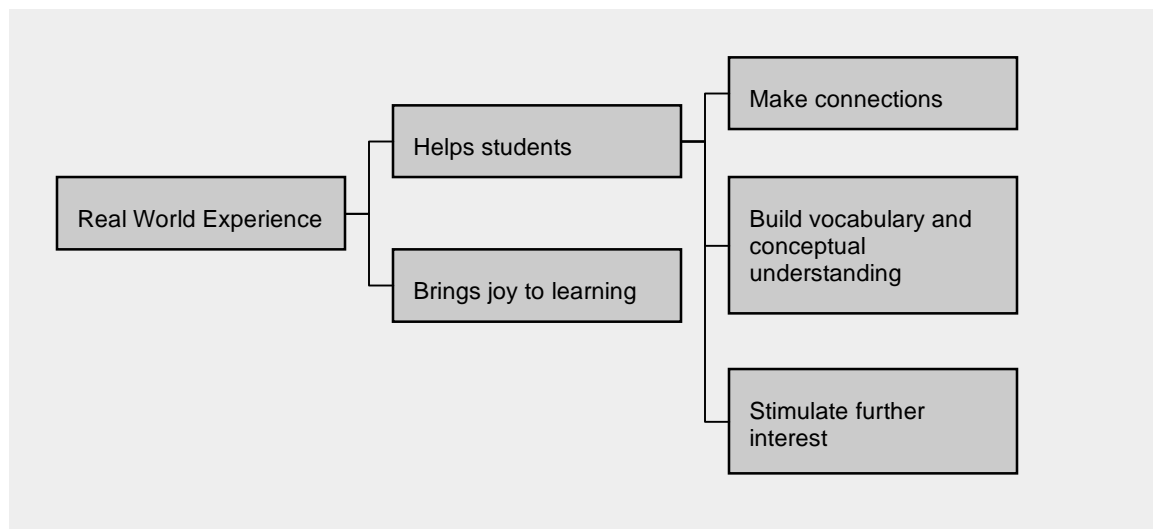
Each of the seven galleries contained in the account acts as a visual and linguistic elaboration of the concepts of experience and/or connection, refining the description of student practices. For the purpose of constructing the voice of "student-in-the-classroom", the linguistic components of two galleries and a small subset of the related images are analysed. Again, an examination of processes is a helpful starting point. Only the student practices will be considered in detail at this time.

The first gallery analysed, "Great Canadian Shoreline Clean-up" (hereafter referred to as "Shoreline"), is selected because it is atypical of galleries in this project. Six galleries document the remaining three field trips, each trip represented by two galleries: a) an account of the field trip and b) an account of the activities following the field trip. Only "Shoreline", the third of the seven galleries, documents both, with seventeen photos and four scans of student work accompanying the linguistic elements. Distinct from "Educating Heart and Mind," "we" appears as a participant only once in the gallery summary; in all other galleries, the set of human participants is limited to students.

Figure 8. Clausal breakdown – Great Canadian Shoreline Clean-up

1   Students <u>participated in</u> an International Project
2   <u>to collect and document</u> shoreline pollution.
3   The students <u>cleaned</u> a 2km segment of Burrard Inlet at Vanier Park
4   and <u>analyzed</u>
5   and <u>reported</u> the data to an international body for inclusion in the international study.
6   We also <u>"ran into"</u> the "Penac" coastguard hovercraft
7   and <u>received</u> an on the spot tour.
8   This gallery <u>contains</u> pictures of the students on the trip
9   as well as (<u>contains</u>) student projects
10   which <u>grew</u> out of the trip
11   in <u>presenting</u> data,
12   <u>writing</u> about experience
13   and <u>creating</u> cartoons
14   <u>to express</u> learning.

Great Canadian Shoreline Clean-up
Field Trips
http://multiliteracies.ca/index.php/folio/viewGallerySlideShow/220/332

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As participants, students (alone and as part of "we") appear as the unmarked Theme and almost exclusively as Actors engaged in material processes. Unlike the processes represented in "Mindfulness", these are not metaphoric realizations of thinking, but rather the more literal processes of doing. Indeed, the single use of an ideational metaphor, "ran into" (italics in original), is a non-metaphoric play on a process frequently employed metaphorically. Experience is thus constituted almost exclusively as "doing" – participating, collecting, documenting, etc. (see Table 3) - and the past tense of the finites firmly establishes experience's borders as the time-space of the field trip and of the associated student activities.

Table 3. Process types – Great Canadian Shoreline Clean-up

Students/We (Participants)

Line	Material	Behaving	Sensing	Relational
1	participated in *[transformative]*			
2	to collect and document *[creative]*			
3	cleaned *[transformative]*			
4	analyzed *[creative]*			
5				reported *[circumstantial]*
6	"ran into" *[transformative]*			
7	received *[extending]*			

Gallery/Projects (Participants)

Line	Material	Behaving	Sensing	Relational
8				contains *[attributive]*
9				(contains) *[attributive]*
10				presenting *[circumstantial]*
				grew out of *[intensive]*
11	writing *[creative]*			
12	creating *[creative]*			
13				express *[intensive]*

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The images' contribution to the realization of experience is affected by the system's affordances, the fixed position of the linguistic elements above the visual realizing an Ideal/Real relation.[55] The photos are re-representations or elaborations of material processes introduced to the viewer in the gallery summary, the photos rendering a more vivid description of purple-gloved children on a Vancouver shoreline working individually and in pairs to collect and record trash, and of delighted children touring the hovercraft, the craft's tracks across the beach re-meaning and refining how the viewer understands "ran into." The photos and drawings are also evidence supporting the account-level claim that experience brings joy to learning, although the textual distance between claim and images likely impacts the construed relationship. From the perspective of the student voice, though, the visual repetition of practices serves to reinforce, literally and grammatically, that these practices occur in the physical world.

The presence of the student work is more difficult to interpret in this gallery, and the clausal relations within the final sentence equally opaque. Pictures and projects are clearly attributes of "gallery", and though "student projects which grew out of the trip" (Line 9) might be construed as a nominal group in which the embedded finite relative clause ("which grew out of the trip") serves simply to identify the projects, it is also possible to read the clause as an extension realizing a cause:result relation. Regardless, the relation of "presenting", "writing" and "creating" to either the participant "gallery" or "student projects" is uneasy. Neither participant can perform the Agent role required by the non-metaphoric material processes. Though one can compensate for the confusion by inferring students as Agents, the participant "students" is unavailable in the text. The four samples of student work evidence the same problematic pattern and are equally difficult to interpret in regards to the concepts of experience, connection, and creation. The work belongs in the gallery, but the gallery's construction makes it difficult to construe the significance of their inclusion.

When field trips and subsequent classroom work are divided into separate galleries, as is the case elsewhere in the account, the association between practices and

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[55] Despite assertions by some that paper/physical documents are linear and that digital documents are not, the text's affordances and the viewer's purpose impact how a page is read. Here, the assumptions regarding the reading/viewing path are based on the layout of the digital page. The path is assumed to be the same as that of a physical page, the viewer/reader beginning at the top and moving down.

participants and the interrelationship of experience, creation, and connection become less ambiguous. The second summary, taken from the gallery "Capilano Connections," is one of two centered on a tour of the lower Capilano River ecosystem, a tour which was preceded by an in-class presentation by the NorthWest Wildlife Preservation Society. As with two additional galleries dedicated to post field trip activities, the title foregrounds connections not experience. The viewer is thus encouraged to understand the thirteen examples of children's work as connections, the title and images working intermodally in a manner analogous to a Token-Value or signifier/signified relation.[56] Understanding the title-image relations as such quickly crystallizes how Jeannie construes the relations between experience, texts and her larger desires for her students. The process of connecting is not associated with the participant "students"; that is, students are not Agents who connect or transform experience into knowledge/learning. Instead, texts/projects are connections and texts/projects connect to the experiences of field trips.

The processes selected in "Capilano Connections" reinforce this analysis. The participant "students" again appears as an unmarked Theme and an Actor performing material processes. As in "Shoreline," these processes are again non-metaphoric, though the context has shifted from the world outside school to the world of the classroom. Interestingly, all four processes in this gallery are material:creative (see Table 4), as are the material processes in "Shoreline" not associated with "participating" in a project or "receiving" a tour. The combination of the two galleries reveals a pattern which holds throughout the account, a sequence in which students participate in an experience and then create a project/text, "recreating" and "inserting" experience to produce texts which perform as connections (See Figure 10). From this perspective, the "make" in "Real world experience is pivotal in helping students make connections…" (Project Summary – Field Trips) is more accurately understood as making texts, the student the Agent who creates the text. The highly valued connection is an attribute of the texts/projects that the students create (Line 1), the text signing/signifying ("provide insight") the learning associated with the process (Line 9). There is no evidence that metacognition is

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[56]Within the literature, several proposals have been made for the construal of image-text relations. The analogy used here, comparable to suggesting that the images are rank-shifted and functioning as embedded clauses, is not intended to suggest a systemic relation or to propose such a systemic relation within current theory.

encouraged here, no metalinguistic discussion regarding the remaking of meaning. The text/project fulfills this role, without further effort from the students.

Figure 9. Clausal breakdown – Capilano Connections

1   Students <u>created</u> major projects [[<u>connected</u> to the experience at Capilano.]]
2   Students <u>recreated </u>the local Vancouver landscape
3   and <u>inserted</u> the dangers to the salmon population in their drawings.
4   The students <u>wrote</u> a paragraph on each major threat to salmon - overfishing, dams, urbanization and logging.
5   One project <u>is highlighted</u>
6   <u>to capture</u> the thoughtfulness [[that <u>was found</u> in all of the students' writing]].
7   Other projects <u>are shown</u>
8   <u>to provide</u> a visual of the variety in the projects.
9   Letters to the sponsors of the trip also <u>provide</u> insight into the learning [[connected to the trip.]]

<div align="right">Capilano Connections
Field Trips
http://multiliteracies.ca/index.php/folio/viewGallerySlideShow/220/390</div>

The assignment of connection, thought, and learning to texts (projects and letters) connotes durability, adding further nuance to the building up of student practices in Jeannie's accounts. The past tense of the finite material processes or Events locates the students' experiences in the time-space of the field trip or classroom (Lines 1-4), but the texts - and thus connections and learning - are typically not assigned temporal limits, the non-finite Event "to provide" (Line 8) and simple present "provide" (Line 9) realizing their timelessness. Though creating is time-limited, it is a privileged practice because it results in something timeless, a connection which is signed by the student work.

Table 4. Process types – Capilano connections

Students

Line	Material	Behaving	Sensing	Relational
1	created *[creative]*			
2	recreated *[creative]*			
3	inserted *[creative]*			
4	wrote *[creative]*			

Projects

Line	Material	Behaving	Sensing	Relational
1				connected *[circumstantial]*
5				is highlighted *[intensive]*
6	to capture *[transformative]*			
7				are shown *[intensive]*
8				to provide *[intensive]*
9				provide *[intensive]*

It is important to note that "have/hold" relations to knowledge continue to be conspicuously absent in the realization of Jeannie's practice. A connection is not "had," it is signed. Connecting is a valued practice, but its existence can only be observed obliquely via the text. The viewer may infer that connections extend beyond the time/space limits of experience and its associated processes (participation in the field trips and the creation of texts) but their existence is to some extent unknowable. The finite/non-finite dimension of the processes realize the pedagogic contributions to students' development while remaining consistent with the desired relations to knowledge.

This construal of Jeannie's conceptions of the relations between experience, creation, and connections is further supported by the confusion in "Shoreline." "Shoreline" is the only instance in which field trip experiences and text creation are combined in a single gallery. Based on Jeannie's descriptions, it is also the only field trip during which students engaged in material:creative processes, for in all other cases, field trips were the site of experience and the classroom the site of text creation. Thus, inexactitude in the gallery "Shoreline" mirrors the blurring of student processes/practices during the trip itself. Quite possibly, the linguistic and visual elements of the gallery and their lack of textual clarity realize how experience, creation and connection became indistinct during this field trip for Jeannie, the optimal relations between practices more difficult to maintain. If so, the construal of practices presented here - the expectations that students will participate and then create texts that foster the desired relation to thought - is reinforced rather than negated by the temporary lack of clarity in Jeannie's accounts.

From a practical perspective, the analysis gives consistent evidence of Jeannie's perceptions of field trips, of the knowledge that may develop from involvement in such, and of the practices expected of the student voice. In contrast to the practices described in "Mindfulness", students are not expected to explicitly articulate their developing understandings. Rather, students join in activities and create texts. The texts sign connection and learning without obliging the students to state the transformations in personal knowledge that result. It should be noted that in this inferential realization of causal relations between field trips and learning, texts are mediators, for insights into the

transformation of experience into learning and thought are mediated by the texts of the student's creation.

Figure 10. Relation between practices of the student voice – Jeannie's classroom

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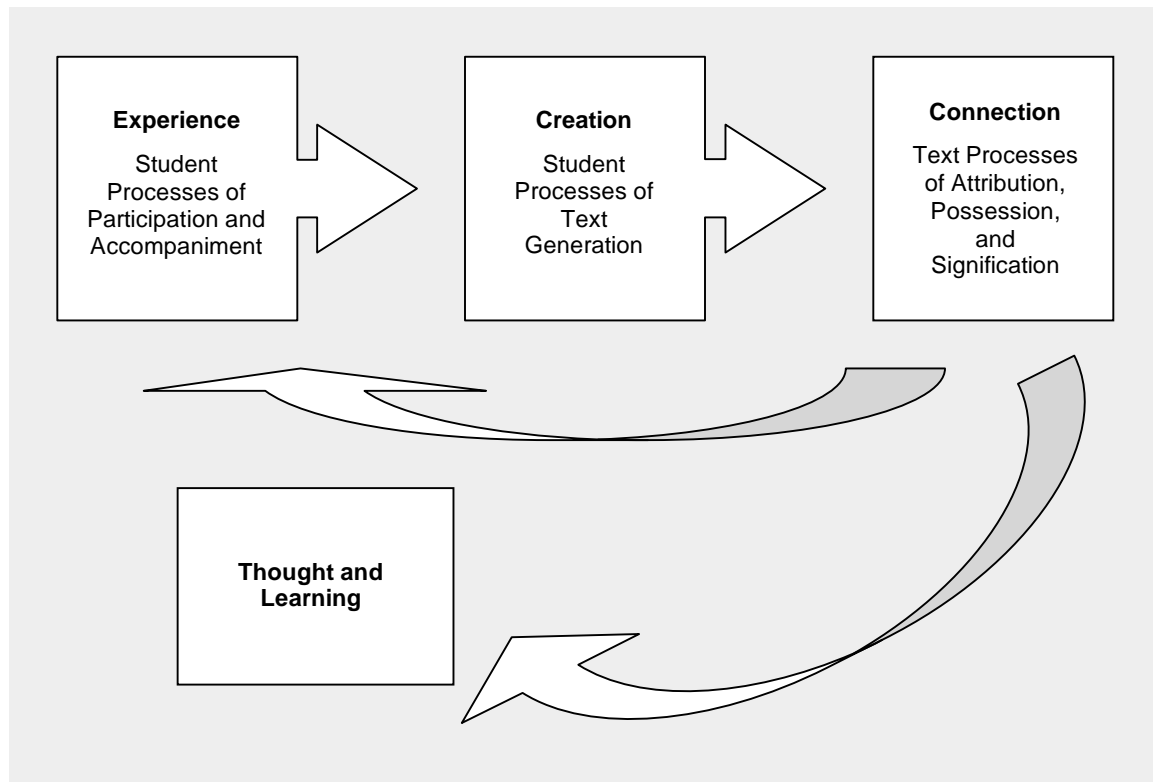
The considerable importance attached to the student texts can be construed from the gallery images. The uniformity in the eight student posters suggests the control and the support Jeannie maintains in their creation. The length of each poster runs horizontally, with the title handwritten at the center-top in a combination of upper- and lower-case letters. The landscape to which Jeannie refers in Line 2 is drawn on a separate piece of paper, then attached to the poster's centre, a position which communicates the centrality of field trip experiences to the text. Three to five paragraphs, each explaining a danger to salmon, have been printed and pasted around the drawing. Although the number of paragraphs varies, all describe a problem and typically offer at least one solution. The paragraphs have a heading, always a noun phrase. In all of the samples but one, lines or arrows connect the summaries to the image; in the poster without lines, the

side of the summaries and drawing abut. From the perspective of student voice, the expectations of students are represented as clear and relatively fixed.

However, there is variation across the written elements, indicating that despite their uniformity, no blackline master or writing frame was used. Even the gallery's first student project, represented by six photos and highlighted by Jeannie as an exemplar of "thoughtfulness", exhibits differences. Two of the paragraphs begin with a definition of the problem; no definition is included for the remaining two. The viewer is addressed as "you" in two of the paragraphs; no comparable interpersonal relationship between the viewer and the author is established elsewhere. The paragraph on urbanization offers no solutions. Errors in subject-verb agreement and pronoun-noun references occur in the paragraph on over-fishing. Overall, these items suggest the nature and the limits of the expectations, the "visual of the variety in the projects" signifying that variety also holds a privileged place in the student voice, despite the apparent control over the text's register. A tension is apparent between the key role assigned to texts in creating connection, the need for good choices, and the valuing of students' individuality, and so it is to issues of individuality in the student voice that we next turn.

Relations

In the account "Field Trips," it is already evident that students are uniquely assigned processes associated with participation and creation, as Jeannie's exclusion is complete save for the shared experience of an unplanned encounter with a hovercraft. Also noteworthy are the lack of desiderative processes associated with the category "students", the realm of desires and the role of Senser occupied by Jeannie and other teachers. But these distinctions are not helpful in understanding the relations between teachers and students. Further, though the emphasis on students' uniqueness and/or individuality is frequently realized implicitly in Jeannie's accounts, the "personal, self-understanding" Jeannie desires for her students, and the absence of any references to collective or shared understanding are early indicators of its primacy in relation to the student voice (Project Summary, Educating Heart and Mind). Students' uniqueness also has implications for the relations between teachers and students, and needs to be

considered. The account "Reading Comprehension Assessment" (hereafter referred to as "Reading") can contribute further to our understanding:

> *We believe that the best way to assess reading comprehension is by listening to children read and discussing the reading with them. Importantly, the student should have a supportive trusting relationship with the adult in order to allow freedom to truly express their uniqueness. We have found that small reading groups allow for this opportunity and allow for ongoing assessment and feedback to encourage development. At the same time, there are pressures from the Ministry and Vancouver School Board to come up with "numbers" that conveniently categorize children and reflect school performance.*

<div align="right">

Assessment
Reading Comprehension Assessment
http://multiliteracies.ca/index.php/folio/viewDocument/269/14011

</div>

The selected paragraph, which sits approximately midway through the demonstration "Assessment," is taken from one of two accounts Jeannie co-authored with Melody Rudd, a resource teacher at Admiral Seymour. A critical difference between this and earlier accounts is its factual orientation. The paragraph opens with a mental:cognitive projection ("We believe…"), and a similar projection ("We have found") occurs later in the paragraph. This represents an interesting shift from the mental:desiderative projections in "Educating Heart and Mind" as priorities and objectives are represented not as functions of the teachers' desires but as something more closely resembling truth. Further, the second projection provides evidence that Jeannie and Melody's practice is consistent with "the best way," reframing the general of the first projection as a specific, existing practice in their classrooms. And there are other significant differences in the experiential function also of interest here. Whereas the students in "Field Trips" and "Educating Heart and Mind" are "my students" (the students in Jeannie's 2006-2007 class), their work and images warranting Jeannie's claims regarding her pedagogy, the "student" in the linguistic portion of this account is more frequently an abstraction. These are not only Jeannie and Melody's students, but all

students, and Jeannie and Melody appear to be laying claim that more individualized forms of assessment are the best way for this larger group. This difference takes on importance with the appearance of the "Ministry" and "Vancouver School Board" later in the paragraph.

In the abstracted ideal, a child has "a supportive trusting relationship with the adult," the modal "should" simultaneously realizing the statement as a desirable state, but one not necessarily attained. Like experience, a trusting relationship is valued not for itself but for what it contributes, the freedom it affords the child to express their uniqueness. Uniqueness or individuality is at the core of what is valued and/or desired. The child-adult relationship grants the freedom to express or be oneself and to reveal one's uniqueness, with the non-finite "to allow" connoting both a sense of causality or control. Small reading groups also "allow for," with some ambiguity as to whether the "allowed for" is the opportunity to have such a relationship and/or whether it references the best way of assessing reading comprehension. To the extent that the viewer resolves the ambiguity by connecting expression of uniqueness to the best ways of assessment, Jeannie and Melody have effectively linked an attribute they desire in the student voice ("uniqueness") to the more factual "best way."

In contrast to earlier desires, the findings of Jeannie and Melody's experience ("We have found") are represented as the reality of their classroom. Carefully, Jeannie and Melody have communicated a) that their practices recognize the uniqueness of each child and b) that supportive and trusting adult-child relationships have been established in the classroom, for such relationships are a prerequisite to a child's willingness to display their uniqueness. The photo to the left of the paragraph, Melody and two children seated on the sofa, acts to further warrant the claim that Jeannie and Melody have made regarding the relationships central to their pedagogies. But just as importantly, from the perspective of voice, Jeannie and Melody's subjective, ideal adult-child relationship has been established.

A very careful contrast is constructed in this paragraph of "Assessment", one that becomes evident by returning to the presence of the "Ministry" and "Vancouver School Board" in this account, one of the very few instances in which they appear. It is notable that the institutions exist separate and apart from the teachers and students, and that they

have a limited role in the experiential functions of the texts. They are not participants in the processes and relations of knowing, and are referenced only as sources of the pressure to produce numbers, a process that results in the categorization of students. Uniqueness, of course, is the antithesis of numbers and of the dilution of individuality they represent. The pressures from outside – the institutional relationships – work against the students' uniqueness, which is valued by the teachers, as well as assessment that contributes to student development. In the relations between institutions, teachers, and students, Jeannie and Melody are presenting themselves as buffers against deindividuating, institutional forces.

The buffer role has implications for assessing the "success" of a student's text. Homogeneity, regardless of the texts' modal form, would contraindicate the professed value placed on uniqueness, and the inferred value of individuality. Already, the student texts in "Field Trips" indicate the potential tensions between the privileged academic text and uniqueness in the student voice, between "higher order thinking," "connections" and "self-understanding," between control over the student text and students' choices in the representation of their experience. Control, choice and individuality exist in perpetual tension in relation to the student voice.

Jeannie's attenuation to the pedagogic challenges this raises is particularly evident in the demonstration "Mindfulness", the opening paragraph appearing below.

Figure 11. Clausal analysis - Mindfulness

1   Our class <u>has been practising</u> mindfulness for up to 5 minutes almost every morning.

2   I <u>have approached</u> the practice very slowly

3   and <u>initiated</u>

4   by <u>talking</u> to the students about the purpose

5   and <u>getting</u> the students' agreement [[to <u>engage</u>]].

6   The purpose <u>was framed around</u> [[<u>being able to grow</u> in the ability [[<u>to influence</u> one's mind purposefully towards peacefulness and calmness]]]].

7   I <u>used</u> the analogy of the mind [[<u>being</u> like a monkey]] – [[often <u>jumping</u> in an uncontrolled fashion from one thing to another]].

8   Our purpose <u>would be</u> [[<u>to learn</u> through practice || <u>to control and focus</u> our minds on the thoughts [[we <u>direct</u>]]]].

9   Anyone <u>is</u> free [[<u>to not engage</u> at anytime]] –

10   it <u>is</u> completely voluntary

11   and I <u>have communicated</u> this in many ways.

12   Central to mindfulness practice, in my view, <u>is</u> voluntary engagement and non-judgment.

Mindfulness
Educating Heart and Mind
http://multiliteracies.ca/index.php/folio/viewDocument/262/12903

Student choice is a paramount concern of this excerpt, though students are realized only in the possessive Deitic "our" (Lines 1 and 8) and within the embedded clause "we direct" (Line 8) post-modifying "thought". The paragraph concerns the introduction of mindfulness practices to the class and the Mood of the opening sentence contains nothing to suggest any particular sensitivity, and the unmarked theme and the circumstances of these practices - their duration ("for up to 5 minutes") and frequency ("almost every morning") – are banal.

But as material processes again take on the properties of metaphors ("have approached"), and Jeannie begins her description of the practice's introduction, the Manner with which she undertakes the actions ("very slowly") and the choice students have regarding participation suggests heightened sensitivity. Mindfulness is not a practice which is imposed on the students; in contrast to the practices described in "Field Trips", there is no assumption that students will join in the practice. Indeed, the voluntary nature of participation is repeatedly emphasized in this paragraph, the quality realized as a relational Attribute in Lines 9, 10 and 12. Learning to control one's mind, the purpose for engaging in mindfulness practices, may be construed as more personal, more individual than other practices of student-in-the-classroom. When acts intrude upon the personal domain, including expressing one's uniqueness or participating in mindfulness, students are represented as having greater discretion.

Though uniqueness and student choice are not identical, they are certainly complementary. It is difficult to imagine how a child's uniqueness could be expressed if students have no power to make independent choices. The student voice in Jeannie's classroom is not infinitely flexible, the students' texts evidence of the control over its framing, but it allows for the inherent heterogeneity of her students and is flexible enough that when a child chooses to trust, there is room for what is subsequently revealed. As students negotiated the recognition and realization rules of voice, the parameters of "good choices," they were also negotiating the limits of the freedom they were accorded.

Summary

The core tenet of the voice of student-in the classroom is the priority assigned to developing complex relations to knowledge; that is, Jeannie's desire that her students develop the ability to move around, through, and in knowing - forging connections, gaining self-understanding, and developing higher order thinking skills. The voice of student-in-the-classroom is a voice of a child increasingly able to control and direct their thoughts, and to discuss their thinking with some degree of abstraction. However in the day-to-day practices of learning, thinking is signed by the creation of texts, the texts mediating experience and performing as the abstracted sign of learning. The role of text in the pedagogical designs appears to contribute to the value it is accorded and the control maintained over its realization. This generates tension, for individuality and uniqueness are presented as privileged dimensions of voice, and self-understanding requires space for students to express difference. Thus, students are accorded some measure of choice when knowing gives the appearance of being personal, when knowing is less directly connected to the common experiences of the classroom and more connected to the students' unique world of experience. In analysing students' texts/messages for their relation to the voice of student-in-the-classroom, these are the critical points of comparison.

Thofiq

Context of Situation

Toward the close of the authoring period, Jeannie encouraged each of her students to select and compile an on-line book of the texts generated during their studies of water. The students knew about the accountability research, Jeannie having explained the purpose of the classroom observations, and they had seen accounts that had already been made public. Visual, spatial and linguistic modes were afforded by Jeannie's pre-selection of the book format. Three projects were set-up for the twenty-five students who chose to create a book, each project containing seven to nine books, and each group gave their project a water-themed title. The students' books contain texts related to a classroom-UBC Faculty of Science collaboration, poetry, posters, speeches, letters, and personal projects and writing, with most entries scans or photos of their work. The texts

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are the students' personal selections; however, in keeping with Bernstein, they are also realizations of Jeannie's pedagogy and messages or instantiations of the student voice.

One activity undertaken by the students was researching a body of water which had personal significance (hereafter referred to as "research project"), and students were strongly encouraged to select a body located in a city, province or country in which they had previously lived. By design, the assignment encouraged students to draw on sources from outside school, including people in their home. As the majority of students' home language was other than English, any information from personal sources would not be gathered in English. The assignment's required elements included: a description of the body of water's location, including latitude and longitude; a drawing showing its location; information about the area in which the body of water is located (ex. country, region, etc.), and an explanation related to their choice/the importance of their selection to the area. Of the twenty-five students who created an on-line book, almost all included their research project in their book, including Thofiq whose project follows.

Recontextualizing Quotidian Knowledge – The Student Text

The research project

Thofiq's book, used to test Proposition 1 and 2, is one of nine galleries in the project titled "The Glow Fish" (http://multiliteracies.ca/index.php/folio/viewProject/236/394). The book/gallery includes his gallery summary, a photo he had taken for the book, three projects and a poem. Two texts, a poem and a photo of his research project, have been included twice. Each of the remaining texts, "How Do We Keep Salmon Safe" (the "Danger" project) and "Water Landscape," are represented by a full-size photo of the poster, and a close-up of one paragraph. Given the relatively short time students had to assemble their books, and their degree of familiarity with the system, construing meaning from the page ordering and/or repetition would be inappropriate.

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Figure 12. Inside cover of Thofiq's on-line book
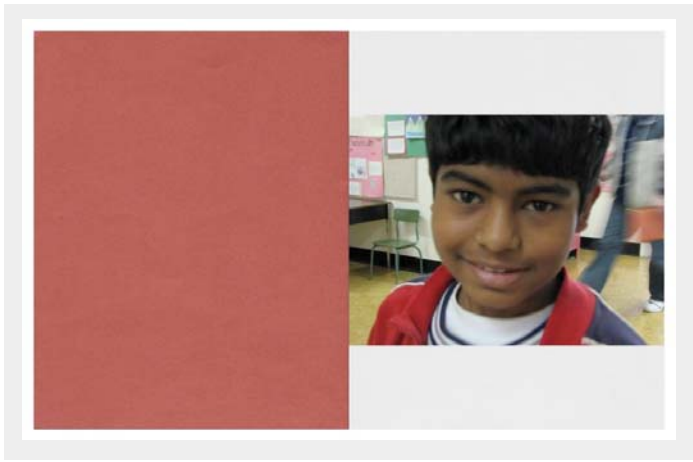
Thofiq, who was born in Bangladesh and is a speaker of Bengali, chose to research the Ganges River. The photo of the project included in his book is somewhat off-centre, and the edges of the text are missing; however, its incompleteness does not interfere significantly with the analysis. The poster is an integrated multimodal text, meanings afforded by and through the visual, linguistic, and spatial modes. The spatial arrangement of the text's phases is remarkably similar to the "Sustainable Practices with Salmon" or "Dangers" poster, resembling an unstructured analytical process comprised of a centred and proportionately larger map of Bangladesh and four smaller symmetrically arrayed Attributes.[57] However, although the salience of the map, its position, size, and colour, attracts the viewer's attention and leads to its construal as Centre, the text's semantic relations more closely resemble phases of a descriptive report and will be analysed as such (see Derewianka, 1990; Kress and van Leeuwen, 2006; Martin & Rose, 2008; Schleppegrell, 2004; Unsworth, 2001).

As with "Dangers," the text is authored on a large sheet of poster paper in landscape orientation, but this time the visual and linguistic texts are hand-written directly on the paper. The four smaller phases are framed by penciled borders, setting

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[57] In regards to conceptual representations, Kress and van Leeuwen's discussion of children's multimodal texts is relatively silent as to the analytical challenge of marking a text's boundaries, and distinguishing between "text" and "process" (2006, pp. 109-113). In fact, in their examples of children's drawings, the verbal/linguistic elements are referenced as "text" and the visual as process, though the semiotic interplay is highlighted. Here, however, the children's posters are clearly coherent wholes, single-titled and spatially organized as such. Bateman's (2008) recently proposed genre approach to multimodal documents, employing the page as a key organizing concept, affords another perspective which might be taken to analyse the unity or disunity of a page; like Baldry and Thibault (2006) he also draws upon the notion of clusters. However, for the purposes of this inquiry, Kress and van Leeuwen will continue to serve as the key reference, though the concept of "text" will be applied to the conceptual whole. The modal components will variously be addressed as phases and/or embedded processes of the text, as is deemed appropriate in each circumstance.

them apart from the map and the "background" of the paper. The title in the top centre, written in capital and small letters, is underlined. Two short lines, running parallel to the line underneath the title, are drawn at the center-bottom of the paper. The map and the picture in the bottom-right corner are coloured and some degree of realism is involved in the colour selection, although the map is clearly an abstraction of the sort one finds in a young person's atlas. The map is labelled, and the size of lettering as well as the visual extent of the Bay of Bengal give additional prominence to it and to water generally.

Figure 13. Research project – Thofiq.
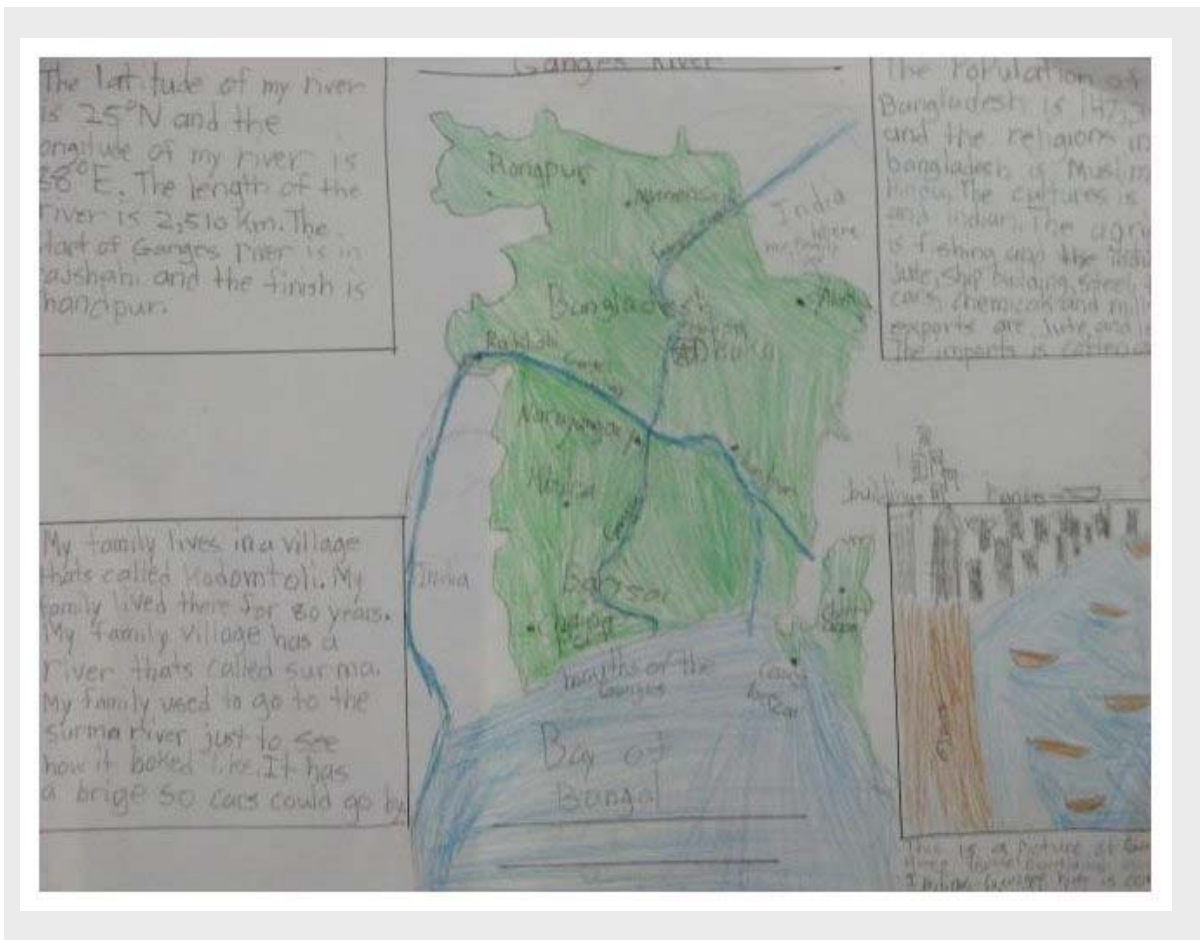
The map may be construed as the Carrier of the central visual or process, the title "Ganges River" and the river systems' salience, effected by colour differentiation and saturation, functioning intermodally to realize the Ganges and its waterways as key Possessive Attributes of an exhaustive analytical process. Two labels "Where my family

lives" and "mouths of the Ganges" appear to be personal additions to a map copied from an academic source. The area surrounding Bangladesh, though clearly labelled "India," is uncoloured and unframed, rendering the country as background and not an Attribute. With the exception of Dhaka, which as capital city is marked by a star and larger lettering, and Rajshahi and Chandpur, which are referenced in another phase, there is no accessible reason for the remaining cities being identified.

The participant structures of the four symmetrically arranged phases generally support that the central theme is "Ganges River," the river realized a) within the topical Theme of the identifying clauses comprising the upper-left phase and b) within the Existent in the linguistic text accompanying the visual phase in the lower-right corner. The remaining two phases provide information required by the assignment, but are less textually cohesive. The upper-right hand corner contains a brief profile of Bangladesh; the bottom-left corner is information about Thofiq's "family village," with the Surma but not the Ganges River realized as a participant. Thus, from the perspective of textual cohesion, the flow between phases is somewhat problematic, the Ganges River the ostensible topic but Bangladesh perhaps a more unifying option.

> *The latitude of my river is 25° N and the longitude of my river is 38° E. The length of the river is 2,510 km. The start of the Ganges river is in Rajshahi and the finish is Chandpur.*

The phases in the upper Margins take the generic form of a report, more specifically a descriptive report, a genre characterized by existential and relational processes and the communication of facts. For example, the river is consistently realized within prepositional phrases post-modifying the Token. By drawing on the resources of grammatical metaphor and realizing the river in a rank-shifted prepositional phrase, Thofiq is able to achieve a degree of density in his description of the Ganges' location, a feature of academic texts. Though the Ganges is sometimes described as "my river," the personal pronoun "my" atypical of an academic report, the ideational, interpersonal and textual features are generally recognizable as appropriate for the age of the student and the type of activity.

My family lives in a village thats called Kodomtoli. My family lived there
for 80 years. My family village has a river thats called surma. My family
used to go to the surma river just to see how it baked like. It has a brige so
cars could go by.

However, the same registerial control is not in evidence when Thofiq uses a personal source of information to describe/explain his topic. The connection of this phase to the larger text is tenuous, only the map annotation "Where my family lives" creating an explicit link since neither the Ganges nor Bangladesh are referenced. This is not to say that the paragraph lacks internal cohesion. The circumstantial element "village" is picked up in the subsequent ranking clause by the referent "there," and a similar grammatical device is used in relation to the "river that's called surma," here the possessive Attribute "river" repeated within the circumstance of Location in the later clause. As in the earlier paragraph, the text is highly patterned, not only in the use of embedded relative clauses to specify the proper name for a generic noun, but also in the consistent use of the topical Theme "my family", and these patterns generate a form of cohesion. However, the thematic repetition also contributes to a reduction in lexical density atypical of a descriptive report. The overall texture has more in common with oral language, "just to see how it baked like" another example of its conversational rhythm. The paragraph is not ineffective, simply inconsistent with the text type with which it is associated.

Approximating voice

But a text type/genre is not a register, nor is it a message as set out by Bernstein, and it is voice-message relations that are integral to the theoretical test. The practices of voice which are privileged in Jeannie's classroom include experience realized in text, and in that respect the paragraph and the poster are a success. A village which is surely unfamiliar to all but Thofiq is made relevant to the study of water: as field trip experiences were recreated in posters and letters, the experiences of Thofiq's family are now similarly realized, a trip to the Surma River a near approximation of the trip to the Capilano River. The phase in the bottom right is the most difficult to analyse, the quality and framing of the photo interfering with its legibility; however, the map's legend, its symbols for buildings and boats, are not iconic of Vancouver, but of a low-lying country

where shoreline buildings stand above a tidal plain and its surges and storm-waters. At the time of this assignment, Jeannie would know that Thofiq had not returned to Bangladesh since he was very young, and that the text's more personal information had been gained in conversation with parents, conversations carried out in Bengali and remade in English. Rivers don't "bake" in Canada. Yet consistent with the privileged practice in Jeannie's classroom, these meanings which were previously unrealized in the classroom now flow across the contexts of Thofiq's life through his selection of processes, the text realizing a connection between what has been lived and what has been learned. In relation to the voice of student-in-the-classroom, the message or text approximates this critical facet of voice.

But the text realizes more than a unidirectional flow from non-school to school contexts, even before adding the complexities of the priorities and relations of voice to the discussion. The power of the institution cannot pass unacknowledged. Though the poster functions as a coherent whole, the text's meanings originate in multiple contexts. The ostensible topic, the Ganges River, has been selected because of its personal relation to Thofiq, but the general topic "water" was selected by Jeannie, the transdisciplinary theme her recontextualization of the curricular demands of the BC education system. Thofiq's topic is personal, yet he has been required to draw upon traditional academic sources to create a context for his personal knowledge. Latitude and longitude, exports and imports, maps and map legends may arise in home discourse; however, the differences in the grammatical realizations of the text's phases suggest this was not the case for Thofiq. The specific references for Thofiq's poster, the books, maps and internet sites, are not included in the poster, but the traces of multiple flows are self-evident.

In construing the contextual resources upon which Thofiq has drawn and which have constrained his choices, it is worthwhile to consider texts produced by students earlier in the year. The analogy to "Dangers" has been briefly referenced, and is a useful point to which to return. Figure 14 shows two examples of the "Dangers" poster: a) Thofiq's, which he included in his digital book and b) one of the posters included by Jeannie in "Field Trips – Capilano Connections"

(http://multiliteracies.ca/index.php/folio/viewGallerySlideShow/220/390).[58] The modal attributes of the text, the specific realization of the textual metafunction, suggests a general student awareness of the importance of register, a consistency in what it means to "create" a project. The Centre/Margin relations are only one design element holding constant across the projects, held constant across the duration in which Thofiq produced his texts, but also across students who have completed the same assignment. Headings, major and minor, are centred and written in small and capital letters, and an image is selected as Centre, with linguistic phases spaced in the Margin. Colour, though limited to

Figure 14. "Dangers to Salmon" posters

the image, extends to the edges of the visual phase, filling its physical space and setting it apart from the background. Linguistic phases are framed to create a similar separation. At the level of text, the spatial design realizes a consistent set of semantic functions, colour, size and position used to differentiate the salience of the text's phases and to center the reading path.

Within each phase, a similar consistency in register is realized. The visual is not merely decorative, but realizes many of the same thematic elements as the

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[58] Additional texts included in Jeannie's accounts further support the argument that students attended to a common set of register features. While the viewer may construe that contextual variables – discourse, models, guidelines – drew attention to these features, the nature of the accounts does not allow analysis of the processes contributing to their realization.

linguistic phases. The students draw upon the genre features of report in authoring the linguistic phases, although the "Dangers" texts are generally explanatory. Still, one sees the use of nominalization, subject specific vocabulary, identifying processes ("Urbanization is when…"), non-interactive participants, and simple present tense. The meaning resources remade in Thofiq's research project are not only knowledge "in" language, but knowledge "of" language and semiotic resources, though the recontextualization may be imperfect.

It is evident from these texts that more than experience is at hand. The irregularities of learning do not obscure the patterns in these texts and in the texts of all the students who publicly shared their projects. It is not only the Field or "what" of the students' texts that is shaped and confined by the pedagogic recontextualization of knowledge; it is also their texture, the genre of a descriptive report, those patterns which are drawn from the system networks of language and other semiotic resources but which are not constitutive of the systems themselves. In creating his project, Thofiq has approximated the student voice, and the student voice has approximated the institutional voice of school. However, confining voice to the theoretical construct of genre is equally inadequate. The student voice is unique to the classroom, the inherent gaps in the recontextualizing process providing Jeannie with space to refashion voice, and for voice to reflect her desires for students' relations to knowledge. An approximation of genre would neither demand nor afford Thofiq the opportunity to bring the institutional and the quotidian into a new relation; the context of situation cannot be reduced to either home or institution. The meanings, the register of the message, is experience newly construed through the meanings of the classroom and the practices of voice. The remaining question is why this text might be considered a success within this context.

Voice, then, becomes a critical point of return. The second proposition asserts that student recontextualization of quotidian resources is dependent on approximation of the student voice; a legitimate question is to what extent the message must approximate the voice, and against which standards the approximation might be assessed. Thofiq's research project is a creative act which connects experience to knowledge, remeaning experience as an academic text, but the academic text is not without flaws when assessed against the genre/text type of a descriptive report. Why, then, is this text to be considered

a success - a success in Thofiq's eyes, for he has chosen to share publicly, and a success in Jeannie's eyes, for the text has not, for all appearances, been reedited and reworked to the same degree as the "Dangers" text? Without the interaction around the text's production, the reasoning may only be construed, but significant indicators are provided by the priorities for and relations of the student voice in Jeannie's classroom.

First, there is the prioritization of personal, self-understanding in the student voice. Self-understanding is itself part of the larger objective of looking at knowledge in a connected and ethical way. These ways and understandings necessitate drawing upon quotidian knowledge in classroom practice; self-understanding is unlikely if the self of the primary pedagogic context has no place in the classroom. Second, the connections which Jeannie seeks to foster, connections evidenced by text, are improbable if texts and/or practices remain strongly classified. One may construe softened boundaries at multiple sites of her pedagogic organization: the centrality of a transdisciplinary theme to the organization of curriculum; the weight given to student choice in practices of mindfulness and joint engagement in the same; the multiple sites of learning provided by field trips and the diverse sources of knowledge, human and otherwise, accompanying such activities. Third, uniqueness is valued, and a trusting relation between adult and child is a precondition for the child's display of their unique understanding. Given Jeannie and Melody's self-ascribed role as buffers to homogenizing external pressures, a cautious tolerance can be expected when difference enters the academic text and tensions between recontextualized institutional and quotidian knowledge must be reconciled. In this classroom, in relation to this student voice, student messages must be evaluated for the knowledge and relations to knowledge that they realize, and a text which demonstrates new relations to knowledge, which gives evidence of combining knowledge of and knowledge in semiotic resources in previously unrealized forms, is sanctioned. If value was not assigned to personal self-understanding, new relations to knowledge, and uniqueness in the student voice, one may reasonably question whether this text/message could be considered a success.

Nothing in this analysis suggests that the realization of quotidian knowledge is sufficient for success. In fact, the extent of the variation in earlier student texts, and Thofiq's evident adherence to the relevant features of genre in his research project

suggest the opposite. Thofiq's success is dependent on his ability to include institutional and quotidian meanings within a single coherent text, the text a message which approximates the student voice. Voice is a complex derivative of the larger social meanings which have been recontextualized for pedagogic purposes, and the particular features of the student voice in Jeannie's classroom. Thofiq's recontextualization of quotidian knowledge succeeds because he adopts, albeit imperfectly, the student voice.

The contribution of multimodality

What then of the first proposition, the dependency of recontextualization on the range of semiotic resources afforded the category? What are the contributions of the spatial, visual and linguistic modes to Thofiq's text? Here, consideration of the modal contributions to the realization of quotidian knowledge and to register is relevant.

The linguistic mode is paramount in realizing Thofiq's knowledge of waterways in his country of origin. It is through the linguistic mode that the following are introduced: that his family continues to live in a village in Bangladesh; that the village's name is Kodomtoli; that his family has lived in the village for 80 years; that importance is attached to the length of time his family has resided in the village; that the Surma River is near his village; that the river bakes in the summer; that the baking of the river is a matter of concern to the villagers; that the river has a bridge; that the village is accessible by car. The visual contributes, providing a) the location of Thofiq's village and b) housing and boat descriptions via the map icons, but it can reasonably be argued that the visually realized meanings of Field are incidental to the text's success. However, in regards to the text's register and the overall cohesiveness, the exact opposite is true. The text's visual features not only approximate, they replicate the previously established register of a poster/report. Although the available materials differ from the "Dangers" text - white paper not colored, phases drawn/written directly onto the poster paper – the spatial organization of Centre and Margin, the typographic features of the heading, the visual process as Centre, and the framing of the linguistic phases duplicate the organization of the earlier text. The Centre visual is critical to the text's cohesiveness, the disparate Margin phases only tangentially related without the map as their central reference. The linguistic elements are disjointed not only thematically but in their texture, and

potentially irreconcilable in their current form without the contribution of the spatial and visual elements. There would be no text without their Modal contributions.

Recontextualizing the Research Project

Throughout the analysis, the reader has likely been aware that two "levels" of recontextualization are at play in Thofiq's book. There is the initial recontextualization of quotidian knowledge in the research project, but there is also a second recontextualization, the remaking of his selected assignments into a digital book, which is offered to the public as evidence of a) the importance of water to society and b) his learning. Very briefly, though the research project remains the primary focus for testing the propositions, this second level of recontextualization needs to be touched upon as it relates to issues of voice and multimodality.

First, though, it is important to understand why the book is an appropriate unit of analysis for testing the propositions and for the theorizing of knowledge mobilization offered in this inquiry. Thofiq's summary provides the rationale for its inclusion, for it explicitly represents the text's pedagogic intent. Although Bernstein's work on recontextualization has been more broadly construed by other theorists (see for example van Leeuwen, 2008), in this paper recontextualization has been tightly framed to include only pedagogic interactions between a knower and a learner, pedagogic discourse being "a principle for appropriating other discourses and bringing them into a special relation with each other for the purposes of their selective transmission and acquisition" (Bernstein, 1990, pp. 183-184). Thofiq's intent is selective transmission and acquisition, the mobilization of his knowledge across contexts for the specific purpose of another's learning, thus realizing the book and not only the texts within an appropriate object of analysis.

An author makes several decisions when creating a book, including which of four covers they wish to use. The system also requires an author to write a brief summary, which appears in the first page view to the left of the book's cover.

Figure 15. Cover page, Thofiq's on-line book.
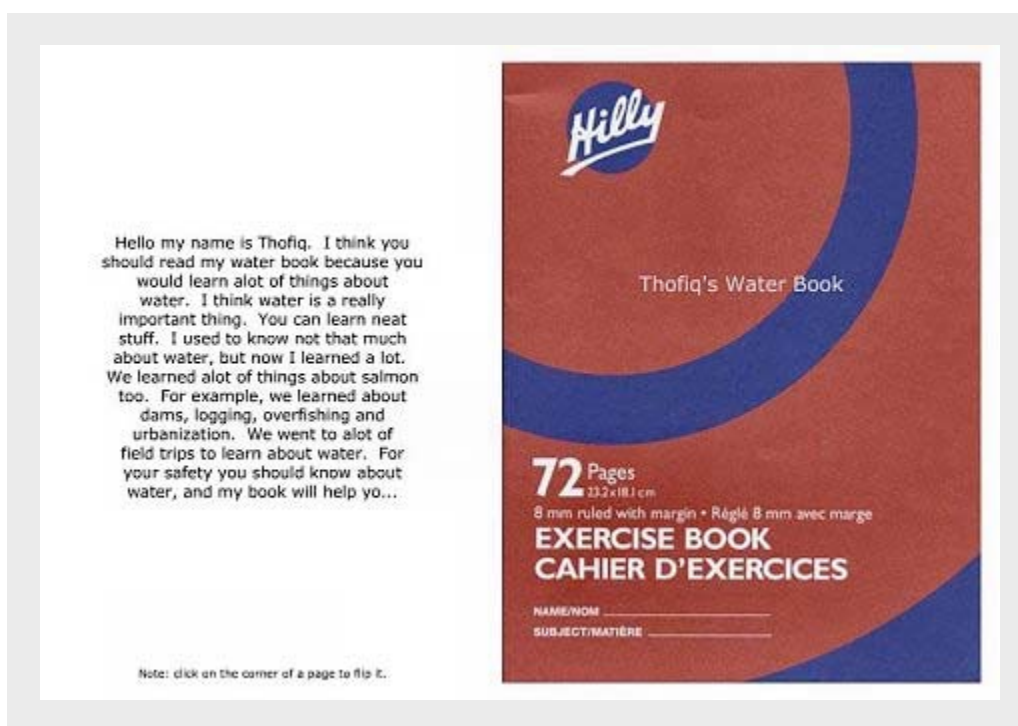
The number of characters in the summary field is limited, and Thofiq failed to notice that he exceeded the field's limits; however, the full text can be recovered in the author's view (password protected):

> *Hello my name is Thofiq. I think you should read my water book because you would learn alot of things about water. I think water is a really important thing. You can learn neat stuff. I used to know not that much about water, but now I learned a lot. We learned alot of things about salmon too. For example, we learned about dams, logging, overfishing and urbanization. We went to alot of field trips to learn about water. For your safety you should know about water, and my book will help you learn.*

A very different register is instantiated in Thofiq's summary, one in which the author and reader are Interactants and the grammatical resources of projection are used to explicitly position Thofiq as knower. He offers two propositions ("I think you should read…" Clauses 3-4; "I think water is…." Clauses 6-7) to the reader, the validity of

which he subsequently warrants by offering evidence of his own knowledge (Clauses 11-14). Interestingly, in introducing his evidence, he first demurs, confessing his earlier ignorance on the topic (Clause 9) before listing the behavioural and material processes in which "we" have engaged to acquire the status "learned" (Clause 10), the contrast between his current and earlier status marked by the conjunctive adjunct "but." The circumstance realized as the topical Theme in the final clause complex ("For your safety" – Clause 15) is a not unsophisticated foregrounding of Cause, a softening of the imperative which follows, for the subjective modal "should" is made more palatable when the reason is first provided. The book can now be offered as help to the reader, filling their need for further information.

Figure 16. Clausal breakdown – Thofiq's summary.

1 Hello
2 my name is Thofiq
3 I think
4 you should read my water book
5 because you would learn alot of things about water
6 I think
7 water is a really important thing
8 You can learn neat stuff
9 I used to know not that much about water
10 but now I learned a lot.
11 We learned alot of things about salmon too
12 For example, we learned about dams, logging, overfishing and urbanization.
13 We went to alot of field trips
14 to learn about water.
15 For your safety you should know about water,
16 and my book will help you.
17 (to) learn

By analysing the speeches included by students in their water books, it would be possible to trace at least some of the academic resources upon which Thofiq and others drew to write their book summaries. No doubt the immediate classroom discourse around the task provided further resources. However, even with the minimal analysis that has been offered, the reader will recognize elements of an elementary school public presentation – the introduction, the relation with the audience, the introduction and

expansion of the topic. Equally, even a lay reader would argue that this is unlike the "typical" conversation between family members and a ten year old child. Yet exactly such a conversation has been recontextualized within Thofiq's book, and "will help you learn." First in his research project, and then in his book, the opportunities afforded Thofiq to recontextualize his knowledge of Bengali, of Kodomtoli, and of the Surma River allowed him to position such knowledge as equal to knowledge gained from institutional texts and practices. Further, in drawing on an academic register, he has been able to take such knowledge public in ways that would be impossible if limited to the practices of the primary recontextualizing field. In drawing on the academic register, he has not diminished the knowledge brought to the classroom but enhanced it, making it accessible first to his classmates and then the larger public. Without the capacity to approximate the student voice, without the ability to represent knowledge in practices/registers that are recognized forms of sharing, it is questionable whether he would have considered his recontextualizations a success, or whether his meanings would have resonated with those whom he sought to share.

Here, also, the contribution of the text's multimodality must be acknowledged. As with the research project, it is the spatial relations that give status to Thofiq's quotidian knowledge. Leaving aside, at least for now, the implications of the book's existence as a public digital text, Thofiq has drawn upon the affordances of book-as-collection to position his research project as equal to projects/activities which drew solely from traditional academic sources.[59] Each selection occupies a page in the book; each page offers help to the reader. Each selection is further enhanced by having been preceded by the book's summary, the summary arguing the value of the proffered information to the reader. The inclusion of the research project was not required, it was Thofiq's choice and he chose to argue its relevance to the larger public. The quality of the argument depended on the linguistic resources under his control but the weight given to the research project is at least partially dependent on its physical positioning with the summary and the accompanying texts. Message approximates voice, drawing upon the range of semiotic

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[59] Thofiq'a water poem, contained in his on-line book (http://multiliteracies.ca/index.php/folio/viewGalleryBook/236/394/0), provides yet another example of Thofiq's recontextualization of quotidian knowledge.

resources which have been afforded, just as in the initial recontextualization of Thofiq's quotidian knowledge.

Helen Zhao's Zack Project at Sir Matthew Begbie Elementary

The Student Voice

MJ Moran's Grade 6-7 classroom sits to the immediate left of the main staircase of Sir Matthew Begbie, the windows along the north wall looking out to the North Shore mountains. Parallel to the windows, across the front of the class, is the blackboard, which is brightly lit from the large skylight overhead. A movable blackboard is variously located around the classroom, its position dependent on who is using it and for what purposes. Underneath the windows, running half the room's length, is a large sink, it and the drying racks and kiln evidence that this was once the school's art room. Cupboards and shelves full of books and materials run along the west wall, an ever-changing bulletin board of in-progress and final projects along the east. As in Jeannie's class, many of the books change to reflect a current unit or project, but there is also a large selection of English and bilingual dictionaries, as well as other reference materials that the students may consult at any time. Discretionary funding from the two research grants was used, in part, to pay for the installation of a drop point, providing wireless internet access to several second floor classrooms. Over the last several years, the school has also been slowly acquiring laptops, and several of these, as well as MJ's personal laptop, are often available at the side of the room. There is no teacher's desk. A small table at the front of the room and a larger table at the back are used by MJ and students alike for presentations and small group discussions.

The two doors to the classroom, one on either side of the blackboard, are the source of a steady stream of people throughout the day. Younger brothers and sisters, grandparents, and parents appear outside of class hours, as do board members of the school credit union and student council representatives, both meeting regularly in MJ's classroom during lunch hour. Little buddies visit throughout the week for shared classes. After school, particularly on Fridays, it is not unusual to see former students stop in on their way home from high school. And current students fill the room from long before the

first bell until shortly after the final bell rings, finishing homework, working on projects, getting help from whoever is available, visiting with friends, playing games, and chatting with MJ. The daily agenda is written on the left of the blackboard; a whiteboard mounted to the left of one door lists homework and upcoming deadlines.

During class time, students sit at one of the tables arranged in a clocklike fashion around the room. Each table seats roughly six students; students work in triads or their "table group" throughout the day. Table groups change monthly and students will have worked with all their classmates by the end of the year. Again, as in Jeannie's class, the voice of student-in-the-classroom is fluid, and students negotiate multiple registers in attempting to master the complex recognition and realization rules in the daily flow of activities.

Educational Priorities and Expectations

> *Classrooms are places of literacies learning. Literacy learning occurs in multiple ways. Each teacher approaches the beginning of a school year individually, creating what she feels are possible places of literacies learning for the students she has the opportunity to work with this year.*

> *As an elementary teacher I am responsible for delivery of all subject areas and therefore literacy learning in all subject areas. At the beginning of the school year I begin to lay the groundwork for the way I expect the students will interact/communicate with each other in the classroom, understanding that each subject area will have it's own specialized language and curriculum but that underneath that language and curriculum is a foundation of communication.*

<div align="right">

Literacies – Language Arts
Term 1 – Literature Circles
The Why of Literature Circles
http://multiliteracies.ca/index.php/folio/viewDocument/110/4899

</div>

The most prolific author involved in the "Alternative Accountability" research, MJ Moran chose to focus her first account on literacy learning, realizing an explicit

alignment between her work and the purpose of the research grant. But in this opening to the first demonstration, she has also laboured to foreground her beliefs regarding learning, beliefs to which she continues to return throughout her accounts. Thus, this opening, and more particularly its participant structures, provide a productive window to begin an examination of the voice of student-in-the-classroom in MJ Moran's accounts.

The two paragraphs are descriptions of places of literacy learning, the description both material and metaphoric. "Classroom" is the first participant introduced, an unmarked Theme of a declarative statement in which classrooms are assigned the attribute "places of literacies learning." The absence of modals throughout these paragraphs, and the limited use of projection is a stark contrast to Jeannie's presentation of priorities and expectations. MJ is presenting "how it is," not what she wants or how it should be, and the same degree of certainty applies whether describing "a" classroom or her classroom.

One of the certainties asserted in MJ's opening is that literacies learning is not bounded by classrooms. Classrooms are not identified as "the" place of learning nor is literacies learning situated "in" the classroom. Rather "literacies learning" post-modifies the Attribute "place", functioning as a characteristic rather than a definition. A corollary of the unbounded space is that students experience literacies learning in contexts other than the classroom, a point which will be shown to have significance in her pedagogic practices.

Literacies learning is picked up as "Given" in the second clause, the Manner in which literacy learning occurs ("in multiple ways") realizing an emphasis on difference. In Clause 3, in which the temporal dimensions of place are introduced as New ("the beginning of the new year"), the noun group functioning as Theme ("Each teacher") suggests a distinction between teachers despite their shared activity, and the circumstance of Manner ("individually") reinforces the distinctiveness. The source or motivation for difference is communicated in the final clause of the paragraph, "for the students [[she has the opportunity [[to work with this year]]]]" functioning as the Beneficiary of the metaphoric "places of literacies learning" created by each teacher. Here, then, is the implication of MJ's description for the voice of student-in-the-classroom, students as the source of difference. The Deitic "the" specifies that "places of literacies learning" are

created for "the" students with whom she will work "this year," the embedded clause functioning as a Qualifier of "students" ("she has the opportunity to work with this year") further specifying that the particular group of students for whom the space is created. Without addressing difference or uniqueness directly, MJ has made the design or creation of the classroom contingent on each year's unique group of students, suggesting the student voice will be crafted with a similar sensitivity to students' individuality.

Figure 17. Clausal breakdown – Literature circles 1.

1   Classrooms <u>are</u> places of literacies learning.

2   Literacy learning <u>occurs</u> in multiple ways.

3   Each teacher <u>approaches</u> the beginning of a school year individually,

4   <u>creating</u> [[what [[she <u>feels</u>]] <u>are</u> possible places of literacies learning for the students [[she <u>has</u> the opportunity [[<u>to work with</u> this year]]]]]].

5   As an elementary teacher I <u>am</u> responsible for delivery of all subject areas and therefore literacy learning in all subject areas.

6   At the beginning of the school year I <u>begin to lay</u> the groundwork for the way [[I <u>expect</u> || the students <u>will interact/communicate</u> with each other in the classroom]],

7   <u>understanding</u>

8   that each subject area <u>will have</u> it's own specialized language and curriculum

9   but that underneath that language and curriculum <u>is</u> a foundation of communication.

Whereas the first paragraph is a general description of classrooms and teachers, the second paragraph narrows the topic to MJ and her classroom. It is the final sentence in this excerpt that is particularly useful for understanding the construal of voice. Again, the ideas projected by cognitive processes ("expect"; "understanding") shade toward fact, the modal "will" realizing the projections as objective requirements of students and school subjects. And so while the first paragraph establishes that places of literacies learning are particularized for "the" students, the second paragraph establishes that MJ's students have obligations, and their first obligation is to interact. This is the purpose for which the metaphoric "groundwork" is laid at the beginning of the school year, and the student voice can be construed as a constituent of the communicative foundation lying underneath the specialized language of curriculum content.

The relations of student and teacher are addressed in detail later in this section; however, it is useful at this time to examine the final paragraph of this demonstration's first document for what it says about the priorities and expectations of and for the student

voice. The Theme of the first clause returns to the temporal space of the opening paragraph, the first day/beginning of the school year. Yet in the remaining clauses, there are only two Themes, "learning" and "we," the participant "we" having replaced "students" and "I." Those who enter the space ("we") are described as coming "to learn together" (Line 4), the enhancing clause of purpose again emphasizing joint activity. The shift in participants is mirrored in the four photographs which are spaced along the left margin of the demonstration, the top two photos showing a single student reading, the third and fourth photos showing larger groups of students engaged in conversation. Where a distinction between teacher and student might have been necessary, the needed Senser has been obscured by introducing expectations in an Existential clause (Line 8). The voice of student-in-the-classroom is realized as less distinct in MJ's classroom, effectively blurred into a larger category that is comprised of participants in the interactive space.

Figure 18. Clausal breakdown – Literature circles 2.

1   The first day <u>sets</u> the tone for the year,

2   as <u>does</u> each day [[that <u>follows</u>]].

3   We <u>come</u> to school

4   <u>to learn</u> together –

5   learning <u>is</u> a social venture.

6   Learning <u>is</u> fun,

7   it <u>is</u> interesting, enjoyable and engaging.

8   There <u>are</u> high expectations set for each one of us in the classroom.

9   We <u>will</u> all <u>have</u> strengths,

10   we all <u>have</u> weaknesses,

11   we <u>can</u> all <u>learn</u> from/with one another

12   and we all <u>want to become</u> the best [[that we <u>can be</u>]].

13   We <u>utilize</u> each day as an opportunity [[<u>to learn</u>]], from the very first day in September to the very last day in June.

Learning, the reason provided for attending school, is first ascribed the Attribute "a social venture" (Line 5) and then four further Attributes: fun, interesting, enjoyable, and engaging. Given that learning is what "we" do, that "we" are learners, the viewer may construe that each of the latter are also Attributes of the learner and of the voice of student-in-the-classroom. Additional Attributes are realized directly, with "we" as Theme

and with the repeated use of "all" emphasizing the Attributes' universality. The possessive attribution performed in Line 10 is accomplished using a bare finite, weakness a fact; however, strengths are probable, not given, the modal "will" suggesting that strengths are not necessarily present at the beginning of the year. Between certainty and probability lies the high modality of "can" (Line 11), which paired with "learn" realizes a significant level of confidence in what may be accomplished during the year, that the circumstances will change from a state in which "we" probably have strengths to one in which "we" will almost certainly have them. The circumstance ("from/with one another") continues the construction of "we," realizing accompaniment and mutual dependency. For the first time in the account, a desiderative process ("want") is employed (Line 12), the previous facts, probabilities and near certainties now transformed to shared desires, the relational:attributive process "to become" realizing a shared goal of transforming into one's personal best. In this final paragraph, there is no voice of student-in-the-classroom, there is only the voice of learners, interdependent, imperfect, actively engaged in achieving "our" potential. In contrast to the voice of Jeannie's student-in-the-classroom, in which the dominant priorities and objectives relate to desired individual relations to knowledge, the voice in MJ's classroom is a voice of collective learning and becoming oneself.

On several points, MJ Moran and her students were unique within the "Alternative accountability" research. In addition to the volume of material generated, MJ's 2005-2006 class had been actively involved in system testing. In 2006-2007, her accounts were also produced and made public over a longer period of time, the "Literature Circles" demonstration "going public" at the end of November. [60] The sheer quantity generated by MJ and her students contributes to its experiential and textual range and diversity. However, there is unwavering consistency in the dominant dimensions of student voice, an emphasis on "we," on striving, and on pleasurable engagement. Equally consistent is their non-negotiability, though the classroom is sculpted to respond and draw upon the students' difference. Throughout the description of practices, one can observe how they infuse the day-to-day enactment of the student voice.

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[60]"Going public" was used to describe moving an account from the private to public portion of the site.

Practices

The vast majority of MJ Moran's site contributions are narratives of practice as it unfolds in the classroom. More accurately, these accounts are the contributions of MJ Moran's class, as authorship shifted from MJ to MJ and her students over time, as they comprehensively documented subject areas and major projects. These accounts are organized thematically by subject area, and provide the evidence for construing the practices of the voice of student-in-the-classroom.

Thinking

This first excerpt is from a demonstration in "Science: A conduit for language learning" (hereafter referred to as "Science"), the fourth paragraph of the opening page.

> *As we progress I read the textbook aloud, stopping frequently to point out my thinking (metacognition), clarify key points, highlight text features, ensure class understanding and create space for active participation; as they follow along in their own copies. Sometimes we begin with questions, to guide our reading. Sometimes we begin with the pictures, to predict what the reading will be about. Sometimes we ask questions from the titles and subtitles, to organize the big ideas and sort out the details. Often we review and speculate how all of these ideas are interrelated and layered back upon each other, in the lesson, in the chapter, in the unit, in the subject and between subjects. When a particular strategy has been employed I will often ask, "Why did I do that?", to get the students thinking about how their learning is being directed.*

<div align="right">

Science: A conduit for language learning
Observing the Universe
http://multiliteracies.ca/index.php/folio/viewDocument/139/9047

</div>

Again, space is not the physical space of the classroom, but a metaphoric communicative space, the metaphor realized again in the Goal in Line 8, the "space for active participation." The paragraph ostensibly describes the progression of a science lesson, but a closer examination shows that MJ begins by describing how the material

resources of the context are brought into the discussion. In this paragraph, the topical Theme ("I" or "we") moves in almost perfect tandem with the process type , and the material and mental processes realizing student practices are conspicuously absent once "I" takes the thematic position. In Lines 4 through 7, during pauses which punctuate reading, a series of circumstantial:indicative and intensive: indicative processes are performed by MJ ("I"). The Values are either significant features of the textbook or examples of the thinking it provokes, the processes indicating features to which students and the viewer should attend. When students return as the topical Theme (Line 9), so does the sense of temporal progression, for students "follow along" during the starts and stops described in this initial clause complex. Thus, the paragraph opens not with the practices of the student voice, but with a statement of the centrality of the collaborative context of activity. The activity's temporal boundaries are marked by progression through the textbook. Useful objects, including the MJ's thinking, are identified. But thinking has not yet been described, and it is only after the type of space has been posited that attention turns to practice.

Figure 19. Clausal breakdown – Science.

1 As we <u>progress</u>
2 I <u>read</u> the textbook aloud,
3 <u>stopping</u> frequently
4 <u>to point out</u> my thinking (metacognition),
5 <u>clarify</u> key points,
6 <u>highlight</u> text features,
7 <u>ensure</u> class understanding
8 and <u>create</u> space for active participation;
9 as they <u>follow along</u> in their own copies.
10 Sometimes we <u>begin</u> with questions,
11 <u>to guide</u> our reading.
12 Sometimes we <u>begin</u> with the pictures,
13 <u>to predict</u> [[what the reading <u>will be</u> about]].
14 Sometimes we <u>ask</u> questions from the titles and subtitles,
15 <u>to organize</u> the big ideas
16 and <u>sort out</u> the details.
17 Often we <u>review</u>
18 and <u>speculate</u> [[how all of these ideas <u>are</u> interrelated and layered back upon each other, in the lesson, in the chapter, in the unit, in the subject and between subjects]].

19   When a particular strategy <u>has been employed</u>
20   I <u>will</u> often <u>ask</u>,
21   "Why <u>did</u> I <u>do</u> that?",
22   <u>to get</u> the students <u>thinking about</u> [[how their learning <u>is being directed</u>]].

Practice is realized through engaging in cognitive processes or metaphors for the same, this excerpt specifying how thinking is performed. As in earlier excerpts, once attention turns to practice and interaction, students are subsumed into "we." In Lines 10 and 12, two possible points of departure or beginning are offered, questions and pictures providing the means (enhancing: Manner) for guiding and making predictions about the reading. Interestingly, the hypotactic clauses providing the purpose for the activity (Lines 11 and 13) foreground skills and not reading per se, although the textbook is the context of this account. In other words, students are not represented as reading, learning to read, comprehending a book/reading or connecting a reading/book to their personal lives. Decoupling reading from practice in this manner has pragmatic implications for the voice of student-in-the-classroom, for it suggests that questioning and pictures may be similarly employed for purposes other than reading.

Table 5. Process types - Science

I - MJ Moran (Participant)

Line	Material	Behaving	Sensing	Relational	Verbal
2		read *[near mental]*[61]			
3		stopping *[near material]*			
4				to point out *[circumstantial]*[62]	
5				clarify *[circumstantial]*	
6				highlight *[circumstantial]*	
7				ensure *[circumstantial]*	
8	create *[creative]*				
18					will ask *[semiosis]*
19	did/do				
20	to get *[extending]*				

We and They – Teacher and Students (Participants)

Line	Material	Behaving	Sensing	Relational	Verbal
1	progress *[transformative]*				
9	follow along *[transformative]*				
10	begin *[creative]*				
10	to guide *[transformative:]*				

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[61] I have interpreted "read" as a behavioural rather than mental process in this clause, as it realizes the performance rather than the interpretation of the textbook.

[62] "To point out" is analyzed as performing a function similar to "discuss," "cover" or "touch upon," a metaphorical indication that realizes the teacher's thinking (ex. how she would approach the matter at hand) as part of the learning context.

Table 5 (cont.). Process types - Science

We and They – Teacher and Students cont. (Participants)

Line	Material	Behaving	Sensing	Relational	Verbal
11	begin *[creative]*				
11			to predict *[mental]*		
12					ask *[activity]*
12	to organize *[creative]*				
13	sort out *[transformative]*				
14			review *[mental]*		
15			speculate *[mental]*		
20		thinking about *[near mental]*			

The continuing role of the textbook-as-context is realized in the circumstance in Line 14, the textbook's titles and subtitles the means (enhancing: Manner) for asking questions. However, reading is no longer the purpose for the interaction. Rather, the hypotactic clauses in Lines 15 and 16 ("to organize…") concern organizing big ideas and sorting out details, the material processes performing as metaphors for the thinking required to achieve these objectives. Mental: cognitive processes continue to be associated with the "we" in Lines 17 and 18, the Phenomenon of speculation ("how all of these ideas…") more abstract than the earlier purposes. Indeed, within the rank-shifted clause functioning as Phenomenon, the circumstances or Location of the ideas (enhancing: Location: place) has now multiplied. They are in the lesson, chapter, unit and subject, as well as the space between subjects. Ideas "are interrelated and layered back upon each other..." What began as reading the textbook builds to a more complicated performance of thinking and thinking about learning, the material resources of the immediate context only beginning points for increasingly abstract thought. The directionality of the activity is first to and then away from the textbook, the sequence of activity realized in the processes (begin, begin, ask, review, speculate). The modal adjuncts acting as interpersonal Theme (sometimes, often) also confer privilege on the abstracted practice, for it is only the more abstract processes that are "often" practiced. The idealized practice of the voice of student-in-the-classroom may be construed as the increasing capacity to draw upon resources from multiple contexts to engage in abstract thought.

Interacting

A foundation for specialized language and curriculum, communication has already been established as prominent among MJ's larger priorities. From communication flows the privilege conferred on interaction. Not infrequently, the emphasis it receives is realized through the continued use of the participant "we" because although interaction between students is not made explicit in the excerpt from "Science," "we" as Actor suggests interaction is a component of all the associated processes in the excerpt - that guiding, predicting, organizing, sorting out, reviewing and speculating are not (or not only) the sum of activities performed by individuals. However, a claim of

"we" is always open to argument, the reader not unaware that its rhetorical use may mask a range of motivations and practical realities. The support provided for the construal of interacting as a privileged practice of the student voice lies not in the linguistic text but in the images which fill the galleries and presentations.

"What a Science lesson looks like" (http://multiliteracies.ca/index.php/folio/viewPresentation/139/88) (hereafter called "Science Lesson"), one of four presentations hyperlinked to the page "Observing the universe." is illustrative. Of the four presentations, two contain examples of group projects; the third is a photo and written text narrative of a non-textbook classroom activity. The link to "Science Lesson" is the last line of the document, an apparent summation of the text, hyperlinks, and images which have proceeded.

The presentation contains seventeen photos, each individually annotated, but no audio.[63] Underneath the title, a description/summary of the presentation runs along the bottom, "Not all lessons are the same, but in general there is a pattern to lessons that follow the text." The first clause limits the universality asserted by the presentation's title, acknowledging the variation evident in other presentations and demonstrations in "Science." However, the Existent in the second clause ("a pattern to lessons that follow the text") contains an embedded clause qualifying the space-time of the presentation's context, the title's claim valid when extended to lessons involving the textbook. The clause also creates a thematic link between the presentation and the (potentially) originating document, a shared reference to lessons that follow the textbook, warranting that the photos are evidence of the earlier-described practices. [64]

The annotation for Slide 1 states that a review of the previous lesson opens the class; Slide 5's that it represents linking old and new material. The remainder of the seventeen slides can be construed as elaborating and extending information offered in the

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[63] To understand how the information in this presentation is offered to the viewer, it may be helpful to recall the general system affordances for creating a presentation. Presentations allow an author to combine text, audio and images, the images timed to fit the length of the audio track. As MJ used no audio in this presentation, each slide appears for 5 seconds before automatically transitioning to the next slide.

[64] Because there are multiple paths by which one might access the presentation, there is not definitive originating point.

demonstration document. Slides 6 to 10 have been selected for analysis, the annotation for them and Slide 5 (helpful for context) reading as follows:

Slide 5 of 17	*Then, I take questions about yesterday's work to clarify understanding and tie it to today's lesson*
Slide 6 of 17	*Which leads to today's lesson, which I lead...*
Slide 7 of 17	*...and they discuss as they work through.*
Slide 8 of 17	*Those who understand take time with those who are just beginning to understand.*
Slide 9 of 17	*I encourage oral discussion of answers before committing to writing.*
Slide 10 of 17	*The discussion usually takes them back to the text...*

Science: A conduit for language learning
What a Science Lesson Looks Like
http://multiliteracies.ca/index.php/folio/viewPresentation/139/88

The interest here is how images are used to warrant the claim of "we" and interaction in the classroom, and so the annotations will not be analyzed in detail. Two points should be noted, however:

1. Language is instrumental to the viewer's sequencing of the offered information. The automatic transition between slides contributes to the construal of ordering, but the intermodal relations between individual slides and their annotations realizes "what" is being sequenced.

2. The participant structure of the linguistic text shifts from the demonstration to the presentation, "we" replaced with "I" and "they", and the photos further realize this differentiation. One may reflect on how the camera positions MJ in these photos, for in all but a limited number of circumstances, the photos documenting classroom practice were taken by MJ.

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The systems of narrative processes and interactive meanings, as theorized by Kress and van Leeuwen (2006), are helpful for engaging with the photos from an analytical perspective.[65] Narrative processes relate to information in the images; interactive meanings refer to the relations that may be construed between the viewer and image. In all photos in "Science Lesson", human participants are represented as engaged in agentive:non-projective processes, the vectors created by the students' bodies and their gaze providing the primary means for construing the activity that is underway. Slide 6 in Figure 20 could be understood accordingly; however, the previous five slides are close to medium shots of students, with clearly salient participants, and with one or two vectors of activity realizing the image's narrative elements. Slide 6 represents a break from this pattern, and when the annotation "Which leads to today's lesson, that I lead…" is also considered, the image is more likely to be construed as a depiction of the setting, the context being "today's lesson." Within Kress and van Leeuwen's framework, then, the image is an analytical process, the temporal and physical space of the lesson realized as the Carrier, and the realized elements or content of the photo performing as Attributes or parts. The agentive processes between the participants teacher (unseen)-student(s), student(s)-student(s), and student(s)-text are analogous to the concept of embedded clauses within linguistic theory, rank-shifted such that they perform as Attributes rather than Carriers.[66] Angel's bright orange sweatshirt, the lines of perspective realized in the ceiling tiles, and her central position in the photo give her a saliency that other students in the image do not possess; however, the impact on the viewer is more likely the influence exerted on viewing path rather than the construal of what is being represented. The image's contribution is to the viewer's understanding of the "general

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[65] Bateman (2008) argues "Taking the conditions of production for multimodal artifacts seriously…enables a more realistic appraisal of the precise motivations and reasons for the appearance of documents. Design is often described as a compromise between many competing and sometimes conflicting constraints and these need to be brought into any discussion of the functional motivation of the resulting artifacts" (p. 17). The material constraints of the classroom, including time and technical capacity, make it unlikely that variables such as lighting and camera angle function as realizations of meaning in these accounts. Therefore, these and other potential variables are not analyzed here or in later discussions of register.

[66] Although Kress and van Leeuwen's grammar theorizes the potential for multi-level analysis of taxonomic images, the potential for rank-shifting is currently undertheorized (2006, p.107). Thus, the analysis is strictly an analogy, outside the properties of the visual grammar.

Figure 20. Presentation excerpts – Science lesson.

pattern" of textbook-based lessons, one such lesson commencing in this image.

It is the shared focus on a book that produces the interactive nature of the lesson. Students are not looking at their book; students are jointly regarding a book. Students are not jointly regarding a book because no other book is available; the context is littered with books, papers, and documents of various kinds. In Slide 9 in Figure 21 (cont.), though a notebook and textbook lie open in front of him, Henry's eyeline casts downward toward an unrepresented Phenomenon, the angle of the vector, the annotation, and earlier slides combining to suggest that the Phenomenon is also a shared text. In Slide 10, the Phenomenon is the book in Julia's outstretched hand, her other hand apparently pointing to an illustration on the opposite page, as she looks to Henry. The privileged voice is the voice of a student in interaction, "we" of the joint activity. The physical distance between participants communicates the intimacy of the relations, particularly Slide 8 as Holly is out of her chair, leaning in, her shoulder touching Klassen's arm. "We" is realized in the students' physicality, a nearness of body as well as perceptive focus.

However, a photograph cannot reveal the dimensions of the interaction between the students, and between students and MJ. The slide's annotation creates two categories of

participants, "those who understand" and 'those who are just beginning to understand", the viewer left to construe how the depicted students might be categorized; however, the "doing" of the interaction, the linguistic text of the students' interaction, cannot be communicated through images. The voice of the student is a voice of thinking, voice realized in interaction with peers, but the nature of thinking realized in peer interaction and in interaction with MJ is still to be described.[67]

Thinking about thinking

To examine the voice of student-in-the classroom as it is privileged in interaction, the analysis returns to the account "Language Arts" and the demonstration "Term 1 – Literature Circles", this time to the fourth of its five pages (hereafter referred to as "Reflections"). The document centers on reflections written by the students after completing and presenting their final projects, and the opening paragraph is a summation of the pedagogic practices that have led to this point. However, it is also a realization of the understanding of success which MJ assigns to the voice of student-in-the-classroom, an understanding in which the nature of the interaction between students is pivotal. In the rather extended excerpt that follows, MJ has embedded a written student reflection within her own writing, then analysed the student text for what it demonstrates of learning. At this point, only the excerpt's first and last paragraphs are considered, each analysed separately for its contribution to the understanding of student voice.

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[67] Although the photos are being examined for evidence of student interaction, the processes cannot be labelled as verbal or mental because they do not contain speech or thought bubbles.

Figure 21. Presentation excerpts – Science lesson (cont.)

The manner in which the class develops through the circles, the discussions, the project work, the personal reflection helps to ensure a feeling of success for everyone. Success for everyone comes from hours of work: scaffolding, planning, modelling, instructing. The presentations are ALL successful because I help them to find ways that they can show their understanding and also ways that they can support each other. My instructional discourse is beginning to come from their mouths. They prompt for clearer answers, more detail in supporting statements, positive turns of phrase. Their are taking on the roll of 'able other' and they are beginning to see the power of 'the group'. I can 'feel' it in the class, the way they interact

with each other, the way they interact with me. I can read it in their final reflections on this novel process.

<u>Harris - Final Reflections on Process</u>[68]

Their words are powerful. Here are two short excerps, of many possible excerps, picked from the Final Reflections on Process, (scans of their reflections). The power of their words for me is in the depth and breadth of understanding of what they have learned individually and of what it is to be a valued member of a group.

"I learned that you yourself have to raise up questions for other people to add on to them and I have to ask them questions if I have any questions. I learned that you have to know exactly what you are going to say when you speak because you can't think until you're done. I learnt that other people can give advice if you ask them for it. They won't come forward with it themselves unless you ask." (Holly)

In the first sentence Holly acknowledges that she has a responsibility to question as part of a group. As a group member she has a responsibility to the group to participate in the conversation. She also has a responsibility to herself to ensure she expresses her lack of understanding, through stating her questions, so the group can help her to understand better. In the second sentence Holly lays claim to knowing that she needs to know what she is going to say before she says it, so when she shares with her group she has a responsibility to be ready to share. She needs to 'know' what she is going to say, because she will not be able to 'think' again until she stops talking.

<div align="right">

Literacies – Language Arts
Term 1 – Literature Circles
Reflections – Student and Teacher
http://multiliteracies.ca/index.php/folio/viewDocument/110/12959

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[68] This line of text is a hyperlink to gallery containing scans of the students' reflections on the novel study, literature circles, and the culminating project.

The first reference to success is a post-modification of "feeling" (Line 1), the sense of success realized not as a nominalization of a cognitive process, but as a perception.[69] The context or circumstance of success is hours of work, whose work remaining ambiguous until Line 9, when the practices associated with success begin to be transferred from MJ to the students. The transference is realized in two processes:

1. Line 8 - "help to find" (material:transformative:extending:possession), a metaphoric change in possession; and,

2. Line 9 - "is beginning to come" (transformative:enhancing: motion: place), which realizes a change in the origin of talk, "My (MJ's) instructional discourse" now originating "from their (the students') mouths."

But what are these practices, the causes (in contrast to circumstances) of the universal success of the students' presentations? They are practices or ways of showing understanding and ways of supporting each other, practices of thinking and interacting. The two practices combine to shift the focus from thinking to thought itself, realizing thinking about thinking as a critical dimension of the voice of student-in-the-classroom.

Figure 22. Clausal breakdown – Literature circles 3.

1   The manner [[in which the class <u>develops</u> through the circles, || (which <u>is</u>) the discussions, the project work, the personal reflection]] <u>helps to ensure</u> a feeling of success for everyone.

2   Success for everyone <u>comes</u> from hours of work:

3   <u>scaffolding</u>,

4   <u>planning</u>,

5   <u>modelling</u>,

6   <u>instructing</u>,

7   The presentations <u>are </u>ALL successful

8   because I <u>help</u> them <u>to find</u> ways [[that they<u> can show </u>their understanding]] and also ways [[that they <u>can suppor</u>t each other]].

9   My instructional discourse <u>is beginning to come</u> from their mouths.

10   They <u>prompt</u> [for clearer answers, more detail in supporting statements, positive turns of

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[69] Two construals of feeling are possible: emotive and perceptive. As the practices described in the remainder of the paragraph are observable, and the role of Senser realized in Line 17 is associated with a mental:cognitive process (can read), I have chosen to construe the process as perceptive.

phrase].
11 Their <u>are taking on</u> the roll of 'able other'
12 and they<u> are beginning to see</u> the power of 'the group'.
13 I <u>can 'feel'</u> it in the class, the way [[they <u>interact</u> with each other]], the way [[they <u>interact </u>with me]].
14 I <u>can read</u> it in their final reflections on this novel process.

The verbal:semiotic process "prompt" and the content of the Verbiage in Line 10 are critical to the construal of the students' meta-awareness. Only a Sayer capable of distinguishing between degrees of quality could ask for "clearer answers, more detail in supporting statements, positive turns of phrase." The students are represented as not only able to produce work of a particular quality, but as able to recognize and guide others toward work of a similar achievement, this ability evidenced in their interaction with MJ and their peers. It is their role as "able other", their ability to think about others' thinking as well as their own, that is central to the perception of success. Neither thinking nor interaction would be sufficient independently. The privileged voice combines these practices to generate "the power of 'the group'", while simultaneously realizing each student's sophisticated awareness of how knowledge is being made.

Holly's reflection is her representation of her learning, her experiences construed through the meanings she brought and made from the unit. Hers and the other student reflections play a particular role in the register of the document, an issue to which the thesis will return in Chapter 9. However, from the perspective of voice of student-in-the-classroom, the final paragraph is of greater interest, for it is MJ's remaking of the Holly's writing - her construal of the valued practice - that is of interest. Here, Holly's "have to's" are transformed into responsibilities, possessive attributes of the Carrier "she", any references to learning ellipsed from MJ's writing. The transformation of learning and have-to's into responsibilities is significant from two perspectives, not the least the extent to which MJ avoids laying claim to any knowledge of Holly's cognitive processes/development. Equally obscured is MJ's role in Holly's developing sense of responsibility. The projection performed by the verbal process in Line 1 (semiosis:indicating) positions Holly as the knower, and removes MJ from needing, expecting, assessing, demanding, desiring or requiring such responsibilities from the students.

Figure 23. Clausal breakdown – Literature circles 4.

1   In the first sentence Holly <u>acknowledges</u>

2   that she <u>has</u> a responsibility [[<u>to question</u>]] as part of a group.

3   As a group member she <u>has</u> a responsibility to the group [[t<u>o participate</u> in the conversation]].

4   She also <u>has</u> a responsibility to herself [[<u>to ensure</u> [[she <u>expresses</u> her lack of understanding, || through <u>stating</u> her questions, || so the group <u>can help</u> her || <u>to understand</u> better]].

5   In the second sentence Holly l<u>ays</u> claim [[<u>to knowing</u> || that she <u>needs to know</u> [[what she <u>is going to say</u> | before [[she <u>says</u> it]]]],

6   so when she <u>shares</u> with her group

7   she <u>has</u> a responsibility [[<u>to be</u> ready [[<u>to share</u>]]]].

8   She <u>needs to 'know'</u> [[what she i<u>s going to say</u>]],

9   because she <u>will not be able to 'think'</u> again

10 until she <u>stops talking.</u>

But the second point is just as significant, for the remaking of Holly's reflection represents responsibility as a core dimension of success. It is responsibility that is foregrounded and repeatedly emphasized as the attribute. It is the Attribute's repetition that leads one to construe the particular importance that responsibility has to the student voice. This is not a demotion of thinking about thinking, for Holly's remarks are remade into post-modifications of responsibility, these practices circumscribing the extent of the responsibilities:

- to question (Line 2)
- to participate in the conversation (Line 3)
- to ensure she expresses her lack of understanding through stating questions, so the group can help her to understand better. (Lines 4)
- to be ready to share (Line 11)

Nor does the ascribing of personal responsibility negate the earlier emphasis on "group", for the circumstances of the responsibilities, "as part of a group" (elaborating:role:guise) and "to the group" (extending:accompaniment:comitative), complement Holly's responsibility "to herself." It does, however, transfigure thinking

about thinking from practice to obligation. No other practice of the student voice is realized as such.

Table 6. Process types – Literature circles 4.

Line	Material	Behaving	Sensing	Relational	Verbal
1					acknowledges *[semiosis]*
2				has *[possessive]*	
2		to question *[near verbal]*			
3				has *[possessive]*	
4				has *[possessive]*	
4					expresses *[semiosis]*
5					stating *[semiosis]*
5			to understand *[mental]*		
6	lays *[transformative]*				
6			needs to know *[mental]*		
6					is going to say *[semiosis]*
7					says *[semiosis]*
8	shares *[transformative]*				
9				has *[possessive]*	
10			needs to 'know' *[mental]*		
10					is going to say *[semiosis]*
11			will not be able to think *[mental]*		
12					stops talking *[activity]*[70]

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[70] I have treated the clause as ellipsing the projection "what she is going to say" and thus analysed "talking" as a verbal rather then behavioural:near verbal process.

Relations

In light of the emphasis on interaction, on "we," and on the transference of practice from MJ to the students, it may seem unnecessary to return to the issue of the relations of students, MJ, and others with whom they shared the classroom space. In "The Why of Literature Circles", MJ described her responsibility "for literacy learning in all subject areas" and for laying the groundwork for the foundation of communication (http://multiliteracies.ca/index.php/folio/viewDocument/110/4899). The opening document also contains the expectation that the students will interact, with teacher and students subsequently remade into "we" in discussions of learning and practice. Though her role as photographer limits how "we" may be construed from photographs, learning is repeatedly realized as a collective activity, MJ and students as engaged in joint practice, and students as increasingly taking on the role of "able other" (http://multiliteracies.ca/index.php/folio/viewDocument/110/12595). However, there is one thread of relations that remains to be taken up, one that was left behind in the discussion of the opening paragraph of "Literature Circles", and this is the designation of the classroom as "a" rather than "the" place of literacies learning and the implications this holds for a larger sense of 'we."

If the acquiring of literacies is not limited to classrooms, and if we "can all learn from/with one another" (http://multiliteracies.ca/index.php/folio/viewDocument/110/12595), then difference is also a dimension of the collective "we." MJ's accounts and the student work they contain provide ample evidence of this student group's diversity, difference between groups foregrounded from the opening account, but a full survey of their diversity is beyond the scope of this thesis. Instead, a short paragraph from a later account will be used, a non-narrative account that holds MJ's reflections on the work she has seen her class generate.

> *The presentations demonstrated many, many things. They demonstrated the level of understanding the students had of the concepts they worked through together. They demonstrated the diverse and attuned strategies they had for representing the knowledge they built together. They*

demonstrated how the knowledge we amassed is communal, we know what we know together - we can talk other people's projects, well! When you look closely at the projects you can see the students at times used their First Language in the text or audio.

The presentations referred to in this paragraph are those prepared by the students for an Open House. The paragraph employs the same rhetorical technique that MJ used in remaking Holly's reflection, a repetition of participant and process. However, in this except, it is the thematic Subject that is repeated, rather than an Attribute, and the process "demonstrate" signs a set of Values by which the presentations may be identified. The highly patterned language, the repetition and the consistent use of relational processes in the ranking clause, is the linguistic equivalent of a pointer stick aimed at a blackboard. The reader may construe that these are things that MJ wants the viewer to notice.

Figure 24. Clausal breakdown – Communicating.

1   The presentations <u>demonstrated</u> many, many things.

2   They <u>demonstrated</u> the level of understanding [[the students <u>had</u> of the concepts [[they <u>worked through</u> together]]]].

3   They <u>demonstrated</u> the diverse and attuned strategies [[they <u>had</u> [[for <u>representing</u> the knowledge [[they <u>built</u> together]]]]]].

4   They <u>demonstrated</u> [[how the knowledge [[we <u>amassed</u>]] <u>is</u> communal, || we <u>know</u> [[what we <u>know</u>]] together]] – [[(how/that) we <u>can talk</u> other people's projects, well]]!

5   When you <u>look</u> closely at the projects

6   you <u>can see</u>

7   the students at times <u>used</u> their First Language in the text or audio.

Each Attribute is a plurality, many things contained in the "many, many, things." The second and third Values, "the level of understanding" and "the diverse and attuned strategies," are recognized markers of academic success, the language consistent with the Instructional Resource Packages (IRPs) published by the Ministry of Education. These are successes which may be reasonably expected to draw positive responses from parents and administrators. Note that the embedded clauses within the nominal groups realizing

the Values continue to emphasize interaction, students' possession of conceptual understanding realized not as understanding of concepts taught or covered in class, but concepts "they worked through together." Strategies for knowledge representation are similarly demonstrated, not possessed, and made tangible in the "built together" knowledge shared in the account.

The ordering of the Values is not inconsequential, for the fourth Value assigned to the presentations (Lines 4) is the one which may receive less instinctive support, but which may be construed as more credible by the viewer because of its positioning in the sequence. The claim to the communal nature of knowledge reflects back to the opening realization of literacies learning extending beyond the classroom. On this, one of the few occasions in which the viewer is addressed directly, MJ warrants her claim by directing their/our attention to students' use of First Languages in their presentations. In effect, communal knowledge is shown as extending beyond the knowledge originating in school, "the knowledge we amassed" including knowledge students have brought to as well as learned in the classroom.

The valuing of quotidian knowledge and its contribution to "we" is integral to understanding the relations of the voice of student-in-the-classroom to other voices. Literally as well as figuratively, "we" is multilingual and more than the classroom. However, within the context of thinking, interacting, and thinking about thinking, to "know" the difference is insufficient. Difference must be shared and used, it must be remade into "communal knowledge". "We" is a "responsibility", the "power of the group" felt as the students increasing take on the role "able other" to support others in "representing the knowledge" they hold. The skillful representation of knowledge benefits not only the knower but also the one who would know, Holly stating "I learnt that other people can give advice if you ask them for it." The communal is not bordered by what begins in the classroom, and the voice of student-in-the-classroom is not limited by individual knowledge. All knowledge is "our" knowledge, to be represented, solicited, and shared. The classification and framing rules sign "we" as those who work together, difference as communally owned, and the category "we" open to those who would participate.

Summary

The voice of student-in-the classroom is a participant in constructing the communicative foundation which underpins school's specialized language and curriculum. Although the voice of student and teacher are distinct in practice, the student voice is frequently embedded within a collective voice whose central attributes are a) continual striving toward potential and b) pleasurable engagement in learning. Thinking is prioritized, and the material resources of the classroom are the context for increasingly abstract thought. The privileged voice of student-in-the-classroom is developed through interaction, requiring the ability to explicate and extend one's own and others' thinking, further advancing meta-awareness of the processes by which one learns. The role of "able other" is a crucial dimension of the student voice, a responsibility shared by all ("we"), as is the responsibility to contribute to communal knowledge. The boundaries of the voice's knowledge explicitly extend beyond the classroom context to include quotidian knowledge as a collective resource, "we" having participated in multiple places of literacies learning.

Helen

Context of Production

From the beginning of the school year, the students in MJ's classroom were intimately involved in authoring accounts. As in Jeannie's classroom, the students were familiar with the accountability research and the purpose of the classroom observations. For many, academic research was a familiar topic, for several students and/or their siblings had been INE research subjects, and MJ was in the process of finishing her Doctor in Education at UBC. The students' first French project required authoring an online book about their family, this introduction positioning the site as a future option for school projects (see http://multiliteracies.ca/index.php/folio/viewProject/205). Multilingual students recorded audio tracks for MJ's presentations, duplicating (however roughly) in Spanish and Cantonese the audio information available in English. Eventually, students would take responsibility for group authoring subject-area accounts,

but as an intermediate step, students were asked to create a demonstration that would link to the larger account "Literacies – Language Arts." MJ described their task as follows:

> *This account is a compilation of individual student representation's of their learning throughout the novel study, 'Zack', by William Bell. Each representation includes their view of their learning in the novel study and their project, which was a summative task at the end of the study. To complete their projects they were asked to 'show what they learned', integrating multiple modes, multiple media and possible interaction with the viewer.*

<div align="right">

Project Summary
Zack Projects
"Literacies – Language Arts"
http://multiliteracies.ca/index.php/folio/viewProject/249

</div>

"Zack" was the class' second novel study, documented by MJ in her "Literacies" account and more specifically in the demonstration "Term Two – Talking, Drawing, Writing" (hereafter called "Term Two"). The demonstration is an organizing point for a complex set of hypermodal documents covering the novel study's objectives, pedagogic designs, and practices, and it includes links to galleries containing class sets of process work and student reflections. The students' task was to further augment the demonstration by adding their perspective of their learning within the novel study. The task required students to make decision regarding: the aspects of the novel study and/or summative project on which they would comment; the relations they would establish with their viewer; and the modes across which they would distribute meaning.

Within these parameters, the students were free to draw on the system's affordances as they chose, availing themselves of the afforded linguistic, spatial, audio and visual options. Students set up a separate on-line project for their work (http://multiliteracies.ca/index.php/folio/viewProject/249), and each student created their own demonstration within the project. Photos and video which had been taken throughout the unit, a subset of the data MJ gathered for authoring accounts, were available for uploading, and students were also free to upload any additional visual, audio, and video resources. More than one student generated hyperlinks within their demonstration, these

links additional to those automatically generated by the system. Thus, though the ideational content of the accounts was restricted, the students were afforded a wider range of multimodal resources and thus greater freedom in their textual designs.

Freedom presents its own challenges, and it is useful to recall what Lemke makes obvious, but which is sometimes obscured in analyses:

> *Hypermodality is more than multimodality in just the way that hypertext is more than plain text. It is not simply that we juxtapose image, text, and sound; we design multiple interconnections among them, both potential and explicit...There are many possible trajectories or traversals, through the web of hypertext. Meaning on a time- and text-scale long compared to the typical scale of linked units (e.g. a paragraph or a page) becomes a creation of the user/reader that is far less predictable to the designer than in the case of a printed book whose narrative or argument has a single conventional sequence. (2002, p. 300)*

The connections to which Lemke refers are designed by author and viewer, each equally a designer of text. Hypermodality increases the volume of viewer options; authors craft text and code in an attempt to order and limit the options available. The students' efforts to influence the viewer's path illuminate how they construed context of production, and how they wished the viewer to construe the context for their work.

To understand the complexity of the design challenge facing the students, it is helpful to know something of the hypermodal text they co-authored. There are an exponential number of pathways to each student's demonstration, the multiplicity a function of system-generated, teacher-authored and student-authored links which appear in navigation menus, in folio pages, and in demonstration pages in several different accounts, and of the choices each viewer makes prior to and subsequent to activating a link to a student demonstration. Each link is its own meaning potential, the meaning a relation between what has preceded and what follows activation of a link. Within a social semiotic framework, hyperlinks have been theorized as paratactic or hypotactic relations, a theorization which holds whether or not one accepts as permanent the current one-way direction of hyperlinks (see Lemke, 2002; for an alternative although related

interpretation of hyperlinks see Djonov, 2005).[71] With links to student demonstrations appearing on more than one-hundred page views, the specific grammatical relation instantiated by a viewer cannot be identified except as a set of probabilities, the definition of this set largely irrelevant to the current inquiry. However, understanding the context of production - the densely networked pages and the non-linear, non-hierarchal relations which students' understood to exist between/among their texts/context - is integral to the analysis of Helen's text, and even more important to the later analysis of teachers' accounts. For this reason, the sheer volume of potential meaning relations and viewer pathways is highlighted.

Though the volume of pathways, and their potential implications for a viewer's construal of meaning may appear overwhelming, the links may be pragmatically understood as roughly grouped in four sets:

1. System-generated links listed on the project's folio page, these links appearing in the list of project components.

2. System-generated links listed in the project's right-hand menu, these links appearing on every project page-view.

3. Student-authored links listed in the project's first demonstration "Links to our Zack Project," (hereafter called "Links").

4. Teacher-authored links throughout several of MJ's projects, but most importantly those created in "Literacies – Language Arts," these links appearing on various pages and in different combinations throughout this extensive project.

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[71] The one-way direction of hyperlinks is a design choice of coders, not a technological necessity. Ted Nelson, who is credited with first using the term "hypertext," has railed in *New Scientist* amongst other locations against what he terms a "deficient structure," one that "…gratuitously imposes hierarchy and sequence wherever it can, and is very poor at representing overlap, parallel cross-connection, and other vital non-hierarchical media structures that some people do not wish to recognize." (Nelson, 2008) In theorizing relations of hypermodality, it would be wise to recognize that links' current unidirectionality is a text instantiated by coders and not hypertext's meaning potential.

"Links," shown in its entirety in Figure 25, was authored by the students, who would have decided amongst themselves who would collaborate in its writing and editing. MJ was not involved.

Figure 25. Demonstration – Links.

The functional relations between each student's, their peers', and MJ's digital texts are apparent from the opening page of "Links," as is the importance the students attach to the viewer's understanding of the texts' relations.[72] The page opens with a request for the viewer to visit "Term Two" before proceeding with their demonstrations ("Please go to *Literacies – Language Arts* and view Demonstration Term Two – Talking, Drawing, and Writing before viewing this Demo"). A demand ("go") softened to a request by the modal Adjunct "please," the students' grammatical selection demonstrates awareness of the viewer's ultimate control over their reading path, regardless of any directives the students might issue. In addition, the courtesy of "Please" is less typical of written instructions (ex. instructions for installing software), and more consistent with an interactive context, again evidence of the students' understanding of

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[72] In contrasting the contextual/registerial integration of complex texts (i.e. those texts containing a facilitative sub-text) with the contextual/registerial consistency of simple texts, Hasan emphasizes that it is a text's function, not its morphological features, which realizes its dependent or independent status (1999b, 252-253). Issues of coherence and reference raised by the students' hypermodal texts are relevant to tests of the propositions because coherence and reference are relevant to the texts' functional relations, and these functional relations are relevant to voice and message. Thus, they are analyzed because they are issues of meaning, and for no other purpose.

the digital domain. Taken with the final paragraph, one sees the students adopt a relatively formal relation with their viewer, their understanding of "public" appearing to extend beyond those with whom they interact daily. Nonetheless, the relation with the viewer is clearly construed as interactive.

Viewers are recommended to activate "Term Two" before reading the students' demonstration, the students apparently not willing to leave to chance that MJ's account has been previously visited. However, the lack of additional instructions presumes a viewer already familiar with the site, one who is able to navigate to different projects without difficulty. In a sense, the students demonstrate that they understand their work as being in dialogue with MJ's projects and perhaps other projects on the site, theirs not the first account that the viewer will have visited. This dialogue, coupled with and reinforced by the task directions, further illustrates students' understanding of the context of production, particularly the field variables. Yet, it oversimplifies the relations of texts, contexts, and register to limit the dialogue's influence to a single dimension of context. As Hasan (1999b) has argued, contextual variables are permeable, and the students' construal of the texts' experiential domain can be expected to influence other aspects of their texts.

The demonstration's final paragraph is the students' summary of the practices and thinking that characterized their study of "Zack," emphasizing the differences as well as the similarities among students, and welcoming viewers to their demonstrations. The paragraph follows the list of links to the students' demonstrations, the list lengthy enough that most viewers would need to scroll down to find the final paragraph. As simultaneous offers of information and demands for action, the links and their location result in the distinct possibility that viewers never advance to the final paragraph, but take up the offer to access another page (Lemke, 2002). However, we may assume that Helen was aware of the information offered in the final paragraph, and that the design of her demonstration presupposes the possibility if not the probability that her viewer is informed by its content. It is within this dialogic context, a dialogue with other authors and with those who navigate through the site, that Helen crafts her message.

Recontextualizing Quotidian Knowledge – The Student Text

The summative task

Helen's demonstration, as well as the gallery and presentation she authored for the students' "Zack" account (hereafter generally referred to as "Helen's text"), were selected for testing the propositions because they evidence recontextualization of home language for academic purposes. She was not the only student to draw upon her home language throughout the year, and there are one or two Zack projects in which the use of home language might more easily be analysed. However, Helen's text is interesting for several reasons: a) the manner in which her summative project is recontextualized within her text b) the modalities in which her home language is realized and c) her representation of the interaction around her use of home language.

In contrast to the analysis of Thofiq's text, Helen's digital text rather than her physical summative project will serve as the object of analysis. The summative project is certainly interesting (see Figure 26). It combines survey results, a graphic representation of responses, interactive design elements, English and Chinese scripts, visuals, and several text types. But to maintain the integrity of the research design and the processes used to sample the accounts, the work of teachers and students must be analysed as publicly offered. Though the public images in Figure 26 are in the system and were available to Helen, she did not include them in her digital text. Those images she did include do not permit a detailed textual analysis – at least, not without significant digital manipulation, which would also conflict with the integrity of the research design. For these reasons, analysis of Helen's recontextualization of quotidian knowledge will focus on the digital text, analysing the summative project only to the extent it is remade in recontextualization.

Figure 26. Helen's summative project, Zack.
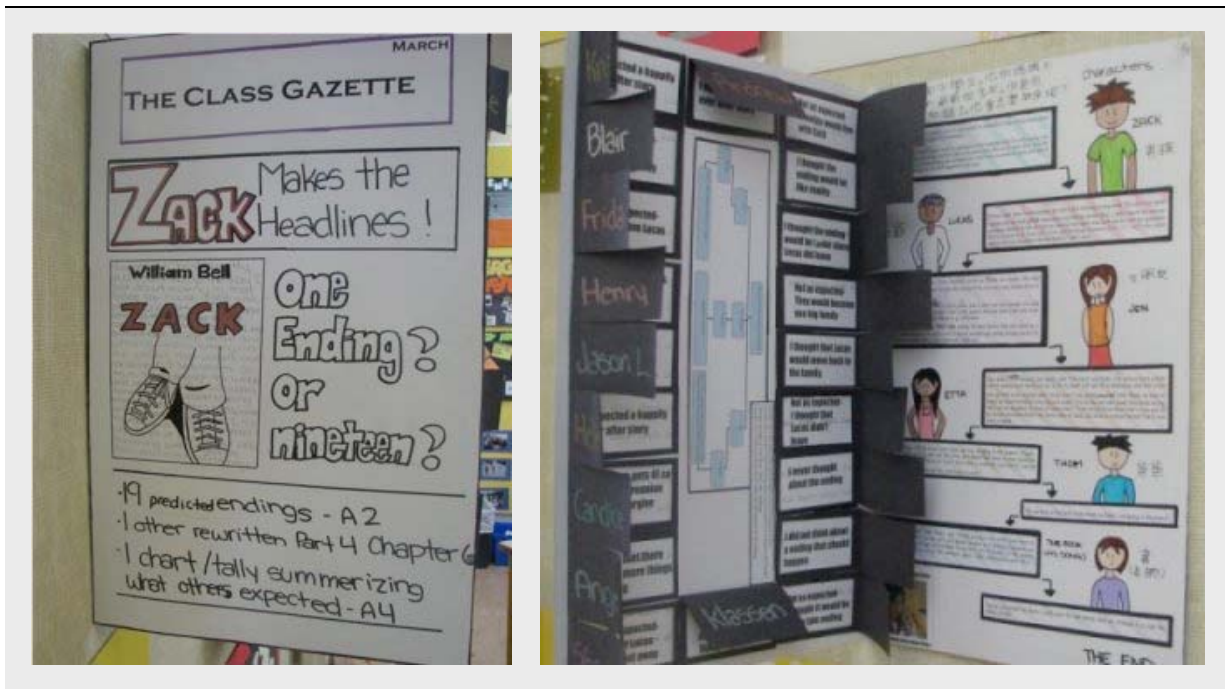
Figure 27 displays Helen's demonstration. The links in the right-hand column have been automatically generated by the system; links in the text's centre were created by Helen and connect to a gallery and presentation she also created. The image at the page bottom is a video of the in-class presentation of her summative project, and the video begins when a viewer clicks the play button.[73] Most typographic features, such as colour and font size, were also outside of Helen's control, although she could select from a small set of pre-determined style settings. The banner for The Multiliteracy Project and the general navigation menu appeared above Helen's document, as they did in all page views within the site.

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[73] The system design requires viewers to activate video. Video does not play after a page has loaded.

Figure 27. Helen's demonstration, Zack.
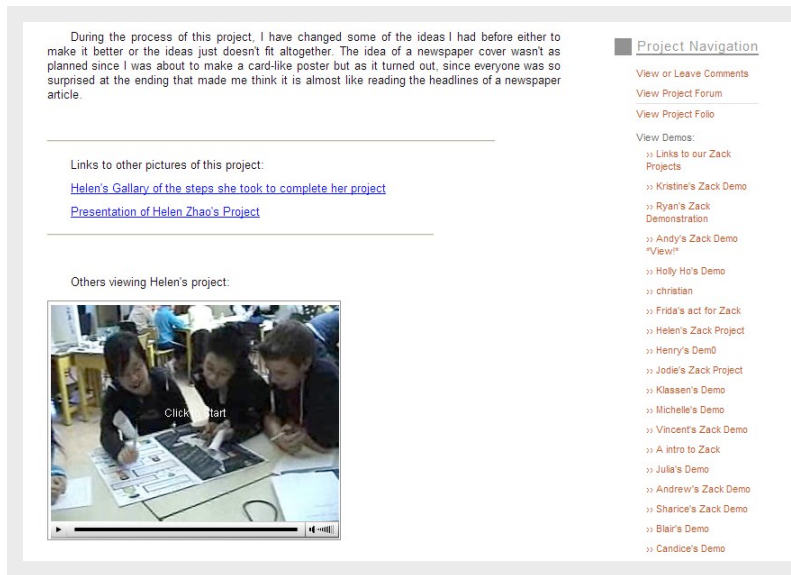
Following Lemke (2002), decomposing the page's visual-organizational elements is the first step of the analysis, for it is these elements that guide the eye and realize the first meaning units apprehensible to the viewer. In this case, Helen has created three distinct phases within her text, organized from top to bottom. The phases are set apart, or framed, by thin gray lines and a not insignificant amount of white space, creating a high degree of vertical symmetry in the arrangement. Each phase is immediately distinguishable by the media it organizes: the first phase a written paragraph; the second phase a pair of links, identifiable by their colour, font weight, and underlining; and the third phase a video which includes Helen's use of home language. There is nothing to distinguish the top-down organization of Helen's demonstration from that of a printed page, and analysis will show that the ordering conforms to the Given-New, general-specific relations theorized by Kress and van Leeuwen (2006).

Perhaps the most interesting organizational feature of the page is the difference in the length of the two gray lines, mirroring the increasing indent of the right-hand margin. The general effect is to create a visual funnel, narrowing the viewer's focus as their eyes track downward. In this, the visual and spatial organization mirrors the offered information, the experiential content of the video significantly more specific than the content offered in the written paragraph.

The first phase

The first phase provides general information about the design choices Helen made in her summative project.

During the process of this project, I have changed some of the ideas I had before either to make it better or the ideas just doesn't fit altogether. The idea of a newspaper cover wasn't as planned since I was about to make a card-like poster but as it turned out, since everyone was so surprised at the ending that made me think it is almost like reading the headlines of a newspaper article.

The paragraph is comprised of two clause complexes. The topical Theme of the first clause, a circumstance of Location ("During the process of the project"), situates the subsequent sequence of activity in the time frame of the summative project's creation and presentation. Yet the summative project is never directly referenced, the meaning of the referent "this" recoverable only if the viewer has previously activated "Links," the project folio, or perhaps "Term Two." Helen's authoring choices demonstrate a relatively sophisticated awareness of the implications of the viewer's path for designing her demonstration. Her lexicogrammatical choices enhance the cohesive relations between her demonstration and other components of the account(s), clear evidence that she understands that her viewer's familiarity with the topic, regardless of the path they have activated. This awareness of the text's hypermodal context and its functional relations is not equally evident in all students' digital texts. Presuming the viewer already has information regarding the novel study and summative project, Helen pursues the task she has been assigned, which is providing a personal view of her learning.

In a further sign of continuity between "Links" and her own demonstration, Helen realizes herself and viewers as Interactants. "Links" addresses the viewer as "you," makes a request of the viewer, and includes links which invite a further response. In Helen's text, the interpersonal relations are realized (amongst other examples) in her self-referencing ("I") in this initial phase, and in the links offered in the demonstration's second phase. Though the demonstration is Helen's alone, the hypermodal traversals yield a sense of its place within a larger collaborative text, the traversals cutting across

the students' digital works frequently realizing this continuity in the texts' interpersonal relations. The individual student messages are not only of the voice, they are instantiated as the voice, the individual texts neither in tension nor subsumed by their place in a cohesive whole.

Figure 28. Clausal breakdown – Helen's demonstration, Phase 1.

1   During the process of this project, I <u>have changed</u> some of the ideas [[I <u>had</u> before]]

2   either <u>to make</u> it better

3   or the ideas just <u>doesn't fit</u> altogether.

4   The idea of a newspaper cover <u>wasn't</u> as planned

5   since I <u>was</u> about <u>to make</u> a card-like poster

6   but as it <u>turned out</u>,

7   since everyone <u>was</u> so surprised at the ending

8   that <u>made</u> me <u>think</u>

9   it <u>is</u> [[almost like <u>reading</u> the headlines of a newspaper article]].

In her opening paragraph, Helen's response to her task is more explicitly reflective than perhaps required in a "view of learning." Rather than claim learning, Helen charts the changes in her thinking during the project's production. We learn of the initial plan (Line 5 – "a card-like poster") and those aspects of the project which were not part of it (Line 4 – "The idea of a newspaper cover"). Consistently, the summative project is represented as subordinate to thinking, which is accomplished by shifting the grammatical forms in which thought is realized, including:

- within a prepositional phrase post-modifying the Goal of a material: transformative process (Line 1 – "of the ideas")

- as the Actor of a transformative:extending:accompaniment process (Line 3 –"the ideas")

- as a Carrier in a relational clause (Line 4 – "The idea")

- as a mental:cognitive process (Line 8 – "made me think")

These grammatical resources enable Helen to ascribe change not to the project but to her thinking, the summative project then realized in a post-modification of idea/thought (Line

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4- "of a newspaper cover") or as a projection of the same (Line 8 – "made me think" projecting a comparison between her classmates' surprise and responses to newspaper headlines). In addition, Helen provides purpose (Line 2 - "to make it better") and reason (Line 3 – "the ideas just didn't fit altogether"; Line 7 – "since everyone was so surprised at the ending") for her changes, furthering her description of her thinking in this phase of her digital text, In sum, in a very brief text, Helen offers what could not be provided by others or realized in any other modality, evidence of the thinking that went into the design of her summative project. In doing so, she enacts the privileged practice of the student voice, thinking about thinking.

Again, as with Thofiq's research project, Helen's paragraph is not grammatically perfect according to the standards of a prescriptive grammar, and the endophoric references are somewhat oblique. Lines 2 and 3 would commonly be construed as a flawed parallel construction, two different parts of speech joined by a coordinating conjunction; "it" in Line 2 refers to "some of the ideas", the number of the pronoun not agreeing with the number of the noun it references. There are conflicts in the tense and aspect of the verbs in the two clause complexes. As a result, there are those who might have difficulty judging this paragraph successful, given the number of such errors in its relatively short length. The page's and/or paragraph's inability to stand alone would be problematic for others, folk or academic theories of digital texts perhaps suggesting that hypertext's affordances of multiple reading paths requires each page view to adopt a more autonomous stance. It is important to acknowledge the text's flaws as well as strengths, for the demonstration was considered a success by MJ, and evaluation of its successful approximation of voice requires consideration of flaws not deemed to interfere with the demonstration's success, whether such flaws arise within a phase, across hyperlinked components and/or the textual whole.

The Second Phase

The second phase of Helen's demonstration consists of two links, preceded by the phrase "Links to other pictures of this project:". Although the phrase's salience is not marked or differentiated from the body text of the preceding phase, it appears to function as a heading which categorizes the two links below. Within the hypermodal context, the

prepositional phrase "to other pictures" realizes an intentional or unintentional ambiguity, as the viewer's construal is highly dependent upon the path taken through the system. One possible reference is the stilled video appearing below the links; however, the media of the third phase coupled with its lower position suggest this is a less likely construal in either the production or viewing context. Two more probable viewer paths, either/both of which Helen may have considered, are a) the reading path recommended in "Links," which would have led to the rich reservoir of images in "Term Two", and b) a path through links to other students' demonstrations, the links offered in the body of "Links" and in the right-hand menu. In both sets, a significant number of links appear above the links to Helen's demonstration. Regardless, whether clicking to Helen's demonstration from the project folio, "Links," "Term Two," or another students' demonstration (via the right-hand menu), Helen construes the viewer as having previously accessed visually rich environments providing detailed descriptions of the novel study and/or student projects. Again, at the micro level, her demonstration reveals an awareness of the digital context of her work, an understanding that her viewers' construals of her offerings will be situated within the very different paths they may have taken. What may initially appear underspecified or inaccurate, a failed reference that is neither exophoric or endophoric, may actually reflect the contextual complexities considered in her design.

The links in the second phases connect to a gallery/book and to a digital presentation. Links to these elements also appear in the right-hand navigation bar, this second set of links automatically generated by the system. However, the same elements appear under two different names. When generating links within her demonstration, Helen entered new link names into an optional description field in an apparent attempt to clarify the information offered by the link - the first link opens a procedural text, the second leads to some form of presentation of her project. In the right-hand menu, the digital elements are listed under the element's name (in contrast to the separate link name entered into the demonstration). The elements and the links in the demonstration would likely have been created at two different times, and thus coordination of names would have required a degree of planning that Helen appear not to have exhibited. However, at least in relation to her demonstration, Helen demonstrates awareness that a link is a

meaning relation, and that a viewer's construal of the type of paratactic expansion they are offered is connected to a) what is clicked and b) what is opened.

Two technical points need to be addressed before examining the linked elements. First, in most browsers, unless changes have been made to the default settings, galleries and presentations generated within the site appear as pop-up windows. A viewer may create any number of static and/or dynamic spatial relations between the originating page and a pop-up: alternating between full-screen windows; placing open windows side-by-side or above-or-below each other; navigating away from the originating page while keeping the pop-up window open; opening multiple pop-ups, spatially arranged for purposes that only the viewer may understand. Within each of these possibilities are possibilities again, the specific page views within each pop-up affording an exponential number of juxtapositions between image, linguistic text, and sound. These Organizational meaning potentials, of the type Lemke (2002) theorizes by drawing upon SFL's conceptions of functional relations among elements and of chain elements, were intentionally designed into the system affordances. However, they will not be included in the subsequent analysis for there is no substantive means of ascertaining how they were understood within the context of production or how they were activated by the viewer, and therefore have limited value for testing the propositions.[74]

Second, the photos which Helen included in her gallery and presentation were not taken by her, and therefore the meanings realized in the angle, gaze, etc. are not of her design. Further, in drawing upon the historical record of the classroom activities, her control over design was limited to selecting from pre-determined options, as she had little or no control over what was and what was not documented. For these reasons, greater attention will be paid to the sequencing and relations between images than to the information realized within any one image.

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[74] Throughout the inquiry, "activate" will be used to mean the act of clicking on a link.

The gallery

Galleries offer an author two presentation options: books and page layout. Helen chose the book option, affording her greater control over the sequencing of the image views. The book option may also have been selected because of the affective response it generates in viewers, those who have worked with the system well aware of a book's initial visual and gestural appeal. Helen's book includes eight photos, the first edited using imaging software to add written text and background effects.

Figure 29. Helen's book 1.
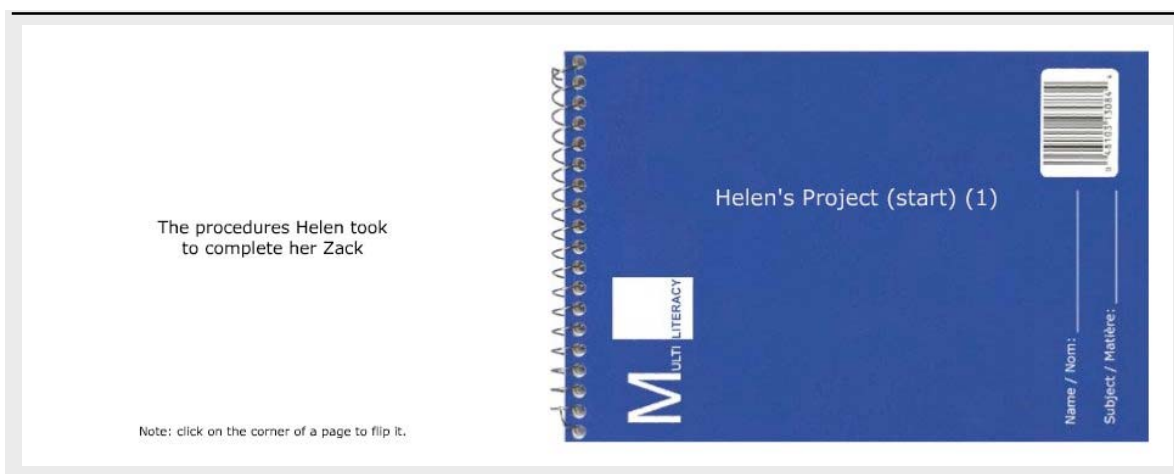
The first page view displays the book cover and the gallery summary, a single noun phrase, "The procedures Helen took to complete her Zack." In its relation with the viewer, the page is internally consistent, neither Helen nor the viewer realized as an Interactant. However, the between page relations, the traversals which Lemke identifies as a central meaning relation in hypermodal texts, are more problematic. Much of the trouble arises in the competition between the right-hand text box and the text on the book cover for the status of title. For those arriving from Helen's demonstration, the summary may be construed as realizing an elaboration of the link's title, the page's left-right relations picking up the noun clause as a given. However, the summary's unmarked typographic features and the resulting lack of salience do not suggest a title. Further, the title appearing on the book's cover, the document name that Helen assigned when originally creating the gallery ("Helen's Project (start) (1)), competes for titular status.

If the noun phrase is not construed as a title, the embedded clause "Helen took to complete her Zack" strikes a discordant note. Unlike the link's title, which is typographically and spatially distinct, the summary's typographic features resemble the features of the demonstration's first phase, the paragraph. A viewer who draws upon these typographic similarities to construe a similar information weight will be confronted by a Helen newly realized as a non-Interactant, not the "I" of the demonstration. The use of the proper noun "Helen" is equally inconsistent with the informality of her "Zack" (in contrast to "Zack project") reference. The problems with coherence in traveling between the two pages (demonstration and book) are partially the result of technical competence, perhaps an initial lack of awareness as to how the document name would be included on the book's cover. But the problems are also created by the text's design, resulting from the choices Helen made regarding use of the summary field.

From a semantic point-of-view, the book's rigid sequencing reinforces the text type/genre of procedure. The strict linearity the book imposes on a viewer, much more rigid than a print book, enables Helen to rely on this single clause to provide her viewers with context. Progressing from the opening gallery page, the summary's importance is immediately evident, for the reader requires its references to "procedures" and "Zack" to make meaning of what they see. More accurately, "procedure" is helpful in construing the time-space of the text's content, the book realizing activity prior to the summative project's completion. But the phrase is also misleading, for this book sequences neither the material nor the cognitive steps involved in producing the summative project, both linguistic text and images realizing quite different meanings. To understand what is and is not realized within the book, one must follow the linear path that Helen has generated.

Only the first page includes language as a design element. The transparency of the background photo has been increased and/or the colour intensity decreased, and the image of Helen further edited using photoimaging software to increase the written language's salience. From the opening clause, Helen digresses from the label "procedure," for the clause realizes the requirements for completion, not the steps, as evidenced in the process "took" (circumstantial:identifying:causal:condition), which identifies the circumstances necessary for finishing the task. Grammatically, Helen has foregrounded "a lot," realizing the volume of activity as the point of emphasis.

Thematically, this is not inconsistent with the opening of the "Links" final paragraph, "From exerting so much work and effort…" Again, Helen's demonstration and its associated elements realize a continuity with other demonstrations in the account. In the context of a lot of effort, completion and success are possible.

Figure 30. Helen's book 2.

Regardless of how quantity is foregrounded, the first page's field is practice. The types of activity required of students require conscious control of mind ("planning") and behaviour ("measuring"), the processes grammatically realized as nominalizations qualifying "a lot." A conjunctive Adjunct ("while") creates a relation of simultaneity between processes in this and the final clause, "changes" occurring during the same time period as planning and measuring. In fact, as planning and measuring are circumstances of the project's completion, changes may be construed as events that punctuated the dominant practices, the flow of planning and measuring interrupted when it would "make it (the project) better."

The clause complex stakes a claim regarding Helen's judgement, for only changes making the project "better" were made during the project's production. The claim is implicit, for Helen is not linguistically realized as a participant. She is, however, realized in the image, and we may construe that image and language work intermodally to attach the practices to Helen, either as a mental projection performed by her or as a circumstance, the equivalent of "by Helen". In considering the relation between the visual and linguistic, it is useful to recall that the summative project required students to consider "multiple modes, multiple media and possible interaction with the viewer."

Students understood that realizing meaning intermodally was privileged. Here, the semiotic and technological demands of the page's production were far greater than adding a clause or phrase to the sentence; however, the more complex realization of meaning afforded Helen the opportunity to show again what she had learned during the study of Zack, that she could realize meaning intermodally as expected in the summative project.

Figure 31. Helen's book 3.

Turning to the relationship between images, one cannot completely discount that Helen intended to author a procedural text, but that the available photos thwarted her attempts to realize her intended meaning. However, looking at the seven photos she has selected and ordered, the congruency in meanings between the first page and the seven following photos is striking on two dimensions. First, as processes, the photos realize the circumstances of the project's completion, rather than the sequence of its production. Considered from this perspective, the images' descriptive power adds details of the physical space - the clutter of the table tops, the physical distance to classmates, the thinking resources of the novel and the mode/media web developed by the students. The summative project, present only on the third and fourth page, is subsumed to the circumstances. Here, also, is evidence that the text is not a procedure. In these two images, the position of the binder, pencil case and novel on the table suggests the photos were taken on the same day, but the material form of the black paper indicates they are temporally out of order. If this was the only instance of temporal mis-ordering, then one might assume a simple error has been made. However, the mode/media web on the fourth

and eighth page is similarly in error, if one attempts to impose a production sequence on the images. As a descriptive text, realizing the contextual resources drawn upon during the summative project's production, the book is a coherent set of meanings. As a procedure, it is not.

More interestingly, if one considers the intermodal flow of meaning across pages, the images realize the circumstances of conscious activity in which the summative project was produced. By all appearances, the images assign greater weight to non-material circumstances, for five of the seven images contain no depiction of the summative project or the material resources with which it was constructed. Instead, the viewer "sees" Helen thinking – twice engaged with resources on multimodal meaning-making, thrice with the novel, the body's relation to the examined object realizing concentration and focus. Change, the punctuation in the flow of activity, is more difficult for the viewer to construe, but conscious processes of planning and measuring are in evidence – if one draws upon the intermodal relations between the first and subsequent pages, and the first page's emphasis on conditions for successful completion. The book's procedural incoherence and descriptive coherence suggest a continuation of the meanings and themes developed in the demonstrations.

Figure 32. Helen's book 5.
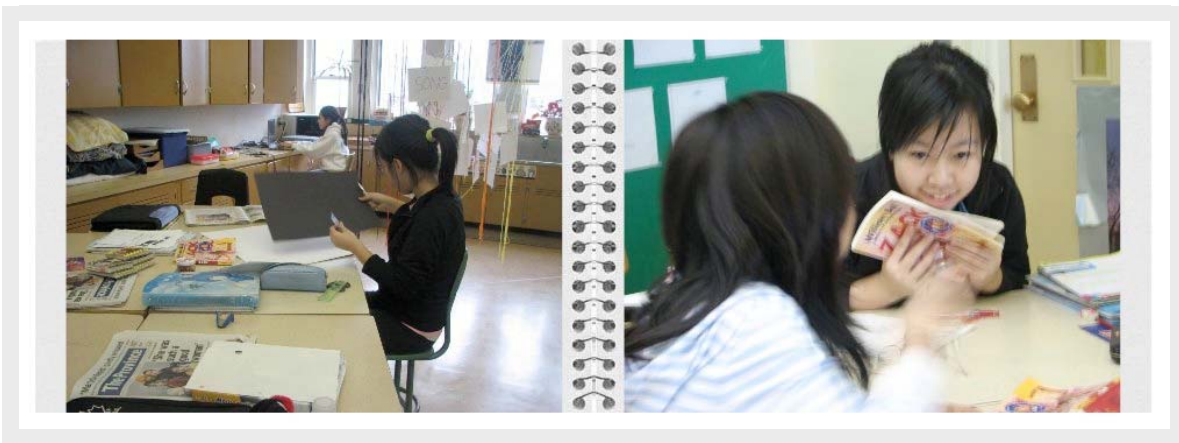
Helen's appearance offers one final piece of evidence that images realize a descriptive rather than a procedural text. The second and eighth pages depict lessons on multimodality, the third and fourth depict measuring, and the fifth through seventh show Helen engaged with the novel. However, the differences in Helen's clothing and the

clothes of her classmate indicate the photos on the fifth through seventh pages were taken on different days. The white hoodie appears second and final page. The state of the summative presentation on the third and fourth pages has already shown them to be out of order. There is pattern, but not the pattern ascribed in the title. The title and text conflict. The question remains how this does or does not trouble voice/message relations.

Figure 33. Helen's book 6.
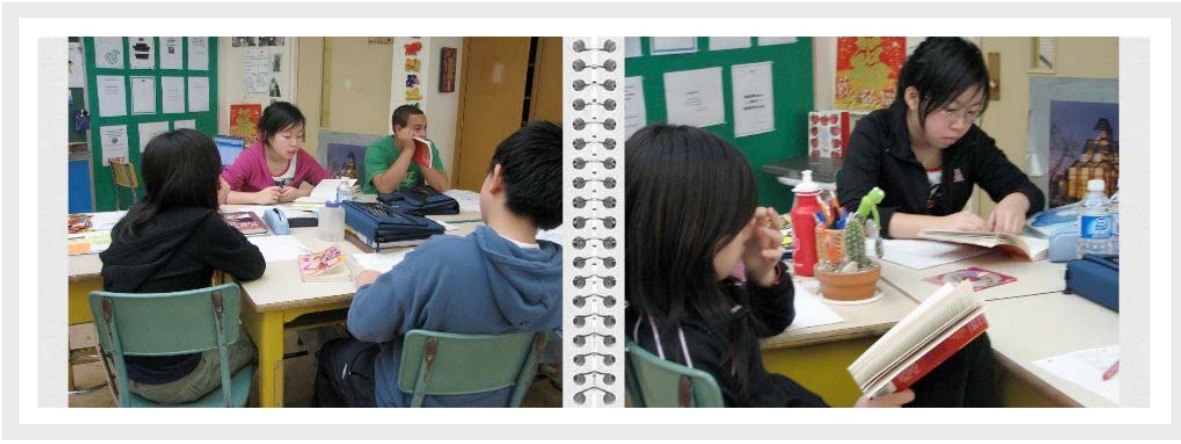
The students' participant status within the photos communicates one final noteworthy set of meanings to the phase and to the demonstration as a whole. Almost without exception, Helen and her peers are realized not as Interactors, but as Reactors, neither gaze nor the angle of their heads/faces nor their body position suggesting they are, were or are about to engage in a transactional process. Helen's Phenomena, the passive participant at which the vector aims, is most commonly a book, a piece of paper, or another form of text, and the Phenomena at which her classmates' eyeline vector is directed is another object. Planning, measuring and making changes, things that Helen did "a lot," are solitary efforts in this book, quite atypical of the practices of the student voice in MJ's accounts, and the demonstrations of many of her peers. The solitary dimension of these endeavors is also quite distinct from practices realized in her presentation and video, and it is to the presentation, the second component of the second phase, we now turn.

Figure 34. Helen's book 7.

The presentation

The second link in Helen's demonstration leads to a presentation combining image and text, but not audio. Here, also, one could examine the semantic relations of the link's title to the pages it connects, as well as the relations between the register of the pages on each side of the click. The link, title, text and images of the presentation, including their intermodal relations, would afford insights similar to those provided by the book. However, the purpose here is not to analyse Helen's text but rather to test the propositions related to the recontextualization of knowledge. Thus, where analysis would duplicate points already raised, the presentation will not be examined further.

Where the presentation adds to our understanding of Helen's approximation of the student voice is in its expansion of the students' participant roles. Five of the presentation's eight slides are included in Figures 35 and 36, the three not included are near-identical in the participant roles they realize. Again, as with the book, the presentation offers the slides in a rigid progression, although the viewer can click on the numeric breadcrumbs along the bottom of the slide (not shown) to move outside the timed sequence.[75]

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[75] Readers may remember that authors must enter information into the text box at the bottom of the page; this information is constant across all slides. In contrast, the text box to the right of the image changes with each slide and the author's use of this field is optional. The slide number just above the text box is automatically generated by the system.

Figure 35. Helen's presentation - Excerpt 1.
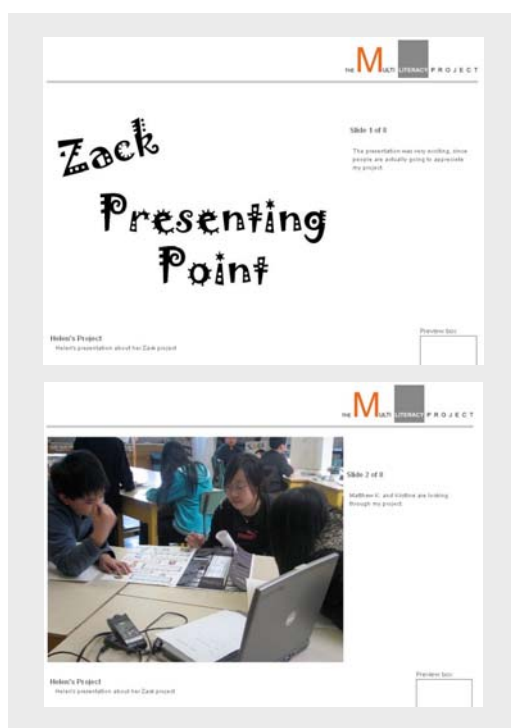
The first slide speaks to the functional relations between the presentation and other phases of the Helen's text, as well relations to the work of her classmates and MJ. The centre of the first slide, an uploaded graphic Helen has created outside of the system, reads "Presenting Point," referencing the point in time – the day of the in-class Zack presentations – that is represented in the series of images that follows. The word "Zack" is positioned to the upper left of the central text, in the same font and font size, but on roughly a 30° angle running upward toward the centre-top of the page. "Presenting Point" is the image's Centre; the linguistically realized meanings in the Margins expand the central idea.

If the viewer has followed the sequence laid out by Helen's demonstration, they will have learned that the phases are ordered temporally, even if their contents are not. The sequencing complements the continued narrowing of the demonstration's focus, which has now shifted from a) a general commentary on the thinking that went into the project to b) a realization of the circumstances of the text's production to c) the project's in-class presentation. As a meta-commentary, the demonstration's first phase sits outside of time. The first portion of the second phase, the book, is fixed in the period prior to the project's presentation. Now time shifts to the presentation day, a point in a time rather than a duration. The digital presentation nests within the larger context of Helen's digital text, which dialogues with demonstrations authored by her peers and MJ.

The presentation realizes fewer discontinuities in its relations with the viewer. The bottom field contains two lines of written text, the first left-justified and realized in bold and a larger font ("Helen's Project"), the second indented and smaller ("Helen's presentation about her Zack project"). The combination of the text box's position on the

Figure 36. Helen's presentation – Excerpt 2.
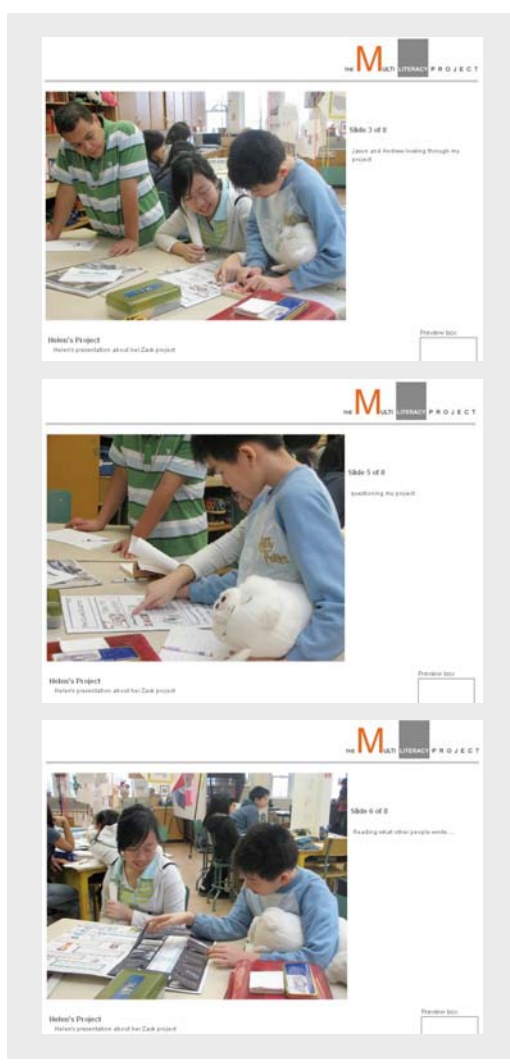
page, the font weight and size, and continuity across slides leads to its construal as a title or label, Helen's non-Interactant status consistent with the title given her links, and the title of her peers' demonstrations. In the text box to the right of the image, Helen and the viewer are again Interactants, the "my" realizing Helen in the conversation which has continued from the demonstration. The relations are consistent across slides, the only misstep the conflicting tense of the finites in the right-hand textbox.

The intermodal relations of language and image, within and across slides, realize meanings that neither could independently – or at least not as effectively. First considered are the meanings realized in the images, after which the slides will be revisited to examine the intermodal relations. As Helen is the focus of the presentation and the analysis, the processes in which she is engaged are central to the discussion; additional processes realized in the Setting of several images will not be discussed.

With the exception of the first slide, all seven images are photos of the presentation. The photos capture seven peers, alone and in combination, with Helen sitting mid-table, her summative project directly in front of her. This presentation does not take place from the front of the classroom, but is conducted within small groups, each photo a narrative process in which students are clearly engaged in doing something. The vectors realized by the students' eyeline, their arms and hands, and the torque of the bodies result in mixes of concurrent processes, their meaning dependent on their concurrent realization. In all but one slide, Helen and those participating in her

presentation are engaged with Helen's project (the Phenomenon) and each is a Reactor in the exchange. In Slide 3, a copy of the novel sits adjacent to Helen's project, Helen looking and pointing to her project, and Jason (the student to the viewer's right) looking and pointing to the novel cover. The vector generated by the third student's (Andrew) eyeline leads to the point where book and project touch, Helen's and Jason's hand overlapping in the angle provided by the camera. Despite the absence of thought bubbles or dialogue, visual techniques for realizing participants as Interactors, the concurrent processes lead to a construal of interaction.

As in MJ's "Science Lesson," the participant's physical proximity realizes a degree of intimacy amongst the students, and the student's facial features suggest they are genuinely interested by the work before them. In this, the presentation is distinct from the book, for the book's images realized Reactors in solitary endeavor, suggesting little of the mental engagement between students that is contained in the presentation. Whereas the book represented a context of (largely) independent thought, the digital presentation emphasizes interdependence, every image a realization of joint activity. Yet for all the semblance of joint cognitive activity, the visual has a limited repertoire for realizing mental activities, the participant role of Reactor unable to instantiate the full array of processes available to the linguistic Senser, and the visual participants Senser and Sayer dependent on their parasitic relation with language. To enhance the cognitive and emotive dimensions of meanings realized in each photo, Helen employs the right text box.

As already observed, the opening slide positions the "Presenting Point" as the Centre or Given of the multimodal text. Shifting to the right-hand text box, Helen can be seen picking up the presentation's Theme and introducing the New to the viewer, that the presentation "was very exciting." In assigning the Attribute to the presentation and not to herself, the meaning is extended to the context of the presentation and to all who participate, not only Helen, the emotive infusing all that follows. The mental is further extended in the second clause, the textual Theme "since" foregrounding the cause of the excitement, the appreciation of her work. Now the process carries the shared mental activity forward, the Senser "people" realized as engaged in cognitive work, the project now the Phenomenon which is appreciated. In both clauses, the mental work extends

beyond Helen to joint engagement, again a contrast with the book's contents. In addition, though the two clauses' incompatible tenses may be a strictly technical error, an inconsistency in the voice that Helen adopts with the viewer, the more whimsical may now place themselves amongst the people who appreciate Helen's work, the presentation realized as a past event but the project something they are "going to" view as the slides automatically advance.

The right-hand text box continues to play a key function in the construal of joint mental activity as the presentation advances to slides containing photos. In the slides depicted in Figure 35 and 36, the content of the right-hand text boxes is as listed below:

Slide 2	Matthew K. and Kristine are looking through my project
Slide3	Jason and Andrew looking through my project
Slide 5	questioning my project
Slide 6	Reading what other people wrote

Slides 2 and 3 enhance what is visually available, uniting two students into a single participant ("Matthew K. and Kristine"; "Jason and Andrew") which functions as the topical Theme. Slide 5 realizes joint activity in the process, the scope or Behaviour (Helen/"me") ellipsed from the clause but realized in the visual. Slide 6 further expands the types of joint cognitive activities in which the students engaged, the rank-shifted clause "what other people wrote" adding that ideas were generated by students outside the image. The photos cannot realize these distinctions, eyelines, fingers, arms, and smiles near-identical across the images. The text specifies and enhances what is first perceived in the image, that the students are jointly engaged in cognitive activities.

Or perhaps, to be more accurate, it should be said that the students are engaged in near-mental behaviours, for after the first slide, the processes are all behavioural:near mental. There are no projections of facts, acts, or ideas. Nor can a narrative be construed from the patterns which emerge as the slides automatically advance. Neither image nor text sequence the presentation. Instead, similar to the book, the slides realize a description/classification of the processes in which the students engaged, an organizational frame of the types of shared mental processes which were entailed in the presentation. The specific participants change, the vectors remain near-identical save for

the changing students, the project is consistently the Phenomenon, and the right-hand text book notes the different types of mental processes in which they engage. The evident patterns of repetition and difference neatly approximate the privileged student voice – and the messages which are MJ's earlier accounts – in their realization of interaction and thinking about thinking. But before addressing this last point, the analysis must address the video, in which home language use is foregrounded.

The third phase

The final phase of Helen's demonstration consists of a video running approximately 1 minute and 33 seconds, the continuity between this and the previous phases realized visually and linguistically. As already noted, the demonstration's increasing right-hand margin creates a vector drawing down to the left-justified video, the visual mirroring the narrowing focus of each of the demonstration's phases. Helen's non-Interactant participant role in the one short line of text ("Others viewing Helen's project:") suggests it functions as a title or heading, despite being typographically indistinguishable from the first phase, and is thus an element of a visual process. The topical Theme "Others" and the use of the colon also leads the viewer to construe that the video is an extension of the previous phase, the clause realizing the Given and the video the New. The framed image of the stilled video and the repetition of participants and vectors enhances the meanings realized in the clause, the abstracted visual grammatical elements nearly identical to those in the presentation photos.

The video is comprised of three clips, which Helen has edited into a single video. Again, the range of material resources/raw footage available to her are unknown, the only certainty being that she had little or no control over framing, angle, duration, lighting, etc. However, this does not negate Helen's role as the text's designer. While the videoed practices may appear to unfold as a temporal sequence, the sequence is Helen's design. As with the book and the presentation, Helen has selected and ordered the information that will be presented to the viewer, potentially cropping or editing out surrounding circumstances that do not fit with the meanings she wishes to realize.

Helen's recontextualized linguistic resources are central to the experience she offers. The presentation's logogenetic unfolding is intriguing, the shifts between written

and oral language and between English, Cantonese, and Mandarin realizing a recontextualization of a recontextualization of a recontextualization of quotidian knowledge, the video recontextualizing the presentation which recontextualized the summative project. Each recontextualization is pedagogically purposed, the earlier text remade in an exchange between knower and learner. It is the final recontextualization that is of interest here, the offering of information to the public, and so the exchanges in the video will be analysed as objects in a reflective text, though the order of experience is a topic to which I will return.

Figure 37.
Helen's demonstration, Phase 3a.

The first clip (Figure 37 – length: 13 seconds) shows Helen describing the general organization of her summative project to Jason (the student to the viewer's right) and Blair. She points to visual and linguistic elements as she speaks, speaking in English whether the text is written in Chinese or English. The transition to the second clip (Figure 38 – length:16 seconds) is a relatively rapid dissolution to a shot of the same three students engaged in the following exchange:

Helen: (pointing to characters in the Chinese text as she "reads" in English) His mom [doesn't like Zack's grandpa for many years...

Jason: [It's pretty hard to translate.

Helen: =but...

Jason   (interrupting) =How would you read that?

Helen reads characters in Cantonese.

The sequencing of the first two clips continues the narrowing spiral evidenced in the progression of Helen's digital text. The digital presentation categorized the students' in-class presentation practices as looking, questioning and reading; the video elaborates and provides specific details as to what this entails. As the video progresses, the same pattern of general to specific is realized on a smaller scale. The opening clip shows Helen providing a general description of her newspaper, the pencil in her right hand employed as a pointer, swooping along and down the page as she speaks; the second clip narrows again to a specific feature of the summative project, the Chinese text. This is the final "point" of Helen's presentation.

Figure 38.
Helen's demonstration, Phase 3b

Chinese language use is not <u>the</u> point of Helen's presentation, not the point of the in-class presentation of her summative text nor of the public digital text which offers an account of learning with the novel study. The nested summative text and the public digital texts are meta-accounts of learning, the students' response to the invitation to "show what they learned." The invitation for the summative text explicitly asked students to consider how they might integrate "multiple modes, multiple media and possible interaction with the viewer." In recontextualizing their summative projects in public digital accounts, the practice of evaluating the afforded semiotic resources had already been established, modelled, and reinforced as described by MJ in "Term Two," and so it is not surprising that students continued to design and execute complex multimodal designs. Drawing upon Chinese afforded Helen the opportunity to show what she knew, and what she knew about modes,

media, and interactive design.

The real-time pattern of demand and offer that the digital text affords the viewer proffers a richer understanding of how "presentation" is understood in this context, evidencing the degree of interactivity as well as the distribution of responsibilities among participants. "Show me what you know" is made literal, a show of presentation skills, the ability to respond to questions, and to navigate within and across languages. Added to "plan", "measure", "change" and "think", practices touched upon earlier in the demonstration, are "present", "answer", "respond", and "explain". To these we might add "reflect", for Helen's digital text is in its entirety a reflective text. Yet, the differences in how information is offered to the viewer raises intriguing questions as to the viewer's experience of the text.

Helen, Jason, and Blair are clearly Interactants in the video and in the demonstration in which the video is embedded, as they were during that day in class. How the viewer might construe their status in relation to the text is more ambiguous, and not only because of the unaffected realism of the exchange to which they listen and observe. Within a hypermodal context, the video controls are an offer to the viewer, an affordance of a choice to replay as much or as little of the clip as they wish, before or after viewing the entire clip. The viewer is thus realized as a participant in the digital text's design, a further basis by which they might construe themselves as Interactants in the text's construction.

This is one of the more fascinating dimensions of Helen's design, how she has drawn upon the register's generic structure potential to implicitly shift the viewer's relation to the text, creating the possibility of reordering the viewer's experience. That is, in drawing upon the resources of video - the sound, color, gesture, spatiality and intimate framing initially captured by an unknowable cameraperson – and the viewer's participatory role in hypermodal environments, a reflective text may be construed as experience, and the grammatical means by which meaning is offered, the limitations on choice as well as the choices offered, subsumed in the viewer's construal of the text as experience. The features of the register's generic structure potential are unchanging, realized in the overall consistency of the digital text; if this were not so, then the demonstration and its elements could not be construed as a text (Hasan, 1999b). Yet, in

that the flow of a text is simultaneously a construal of its context, the viewer's interaction with the text affords the potential to shift how the viewer understands themselves within the context, affording the possibility (but not the certainty) that the order of experience is changed. The implications for knowledge mobilization will arise again in the discussion of the teacher's texts.

First, however, further consideration must to be given to the meanings realized in the video. Jason and Helen speak simultaneously as the second clip opens, Helen translating as she reads, Jason commenting on the difficulty of translation. Helen may not consciously have used a pencil to follow as she read, but the gesture recontextualized for the viewer provides evidence that Helen is not simply telling others what she meant, but is translating Chinese in the moment. Jason's comment legitimates the difficulty of the task, without her needing to make any such claim. When Jason interrupts to ask for the oral Chinese, she responds to his request in Cantonese. The assumption implicit in Jason's demand, that Helen will be able to respond, further supports a construal of Helen as the more able person among the group. The display sets her apart from her peers, realizing her ability to write, translate and read with a greater degree of proficiency.

The third clip (length – 64 seconds) is further evidence of Helen's proficiency, a similar conversation with three different students that reinforces and expands. Holly is on the screen right; Jody is between Helen and Holly later in the clip.

Holly   What's that word?

Helen in Cantonese

Holly: What does that mean?

Helen: Like, what will he do.

Holly: Oooh.

Helen: Didn't you learn that last year in Chinese [school?

Holly: [No I…no but then I learned Mandarin. What does this say?

Helen: Ye-ye. It's supposed to be (in Chinese)

Holly: Is it?

Helen: It's suppose to be fong-fong but then ye-ye (unclear)

Holly: (unclear)

> Helen: Because Wendy said that, um, (ye ye) is her dad's side [of the
>   family
>
> Holly: I just remember, I just remembered that.
>
> Holly: Oh, okay. (pause) You should have a Chinese name for Zack.
>
> Helen: How?
>
> Holly: =I don't know.
>
> Helen: =You pronounce it for me.
>
> Holly: =I don't know.
>
> Jody: You wrote a book in Chinese? Wow.

The negotiation between Helen and Holly requires navigating Cantonese, Mandarin and the Chinese script, as well as the complexities of Chinese honorifics for family members. Again, we see a sequence of demands and offers of information, Helen's peers looking, reading, and asking questions, and Helen responding to requests. In this second exchange, Helen lays claim to quotidian and non-quotidian sources for her linguistic knowledge, calling upon the shared context of an after-school Chinese program, and to a fellow classmate's (Wendy's) knowledge of Chinese honorifics to legitimate her answers. Again, Holly's questions carry the implicit assumption that Helen will be able to supply the demanded information. In the one exchange she cannot, in which the subjective imperative "should" is used by Holly to point to Helen's decision/failure to assign a name in Chinese script to a character (Zack), Helen responds with her own demand for information "How?" Her challenge quickly establishes her knowledge of the Chinese script is at least the equal of Holly, who is unable to help. Each exchange requires Helen to demonstrate more of what she knows, realizing a capacity for answering questions as well as a depth of expertise that could not be achieved with a single example. The video realizes Helen as knowing her project, knowing how to interact, and knowing how to represent her ideas. However, to understand the video only as evidence of knowledge-in-action, framed by the temporality of the presentation, is to miss the more complex meanings offered the viewer. As a third recontextualization, a nesting of knowledge-in-action, the digital demonstration is Helen's analysis of what she has learned, an offering of a second order of experience. It is her reflection on what she

may offer and on her abilities to draw upon a range of semiotic resources to convey her meanings, offered in the guise of a shared moment in the classroom.

Jody's voice closes the video and the demonstration, posing the rhetorical question "You wrote a book in Chinese?" One may recall the opening to Helen's presentation, where she wrote in the right-hand text box "The presentation was very exciting…" The final word voiced in Helen's demonstration is "Wow!"

Approximating voice

"Wow" closes Helen's demonstration, but opens the discussion as to why Helen's text might be considered a success, what it reveals about the role of voice in the recontextualization of quotidian knowledge, and how multimodality is implicated. The particular knowledge upon which Helen has drawn is quite clear, for her facility with Chinese – the written script, Cantonese, and Mandarin – has developed outside the boundaries of her public school education, although her after-school Mandarin classes were housed in the same building. But the relevance of Helen's quotidian knowledge to the task she was assigned may be less clear, and needs to be addressed.

The realization of Chinese in the experiential and interpersonal functions of the digital text is largely dependent on how it was deployed in the summative project, the initial recontextualization, for if the summative project had not included Chinese text, neither Chinese as subject nor Chinese as mode of communication would have emerged during the in-class presentation. Perhaps Helen would have drawn upon Chinese in her digital project, what became the third recontextualization, but such a conjecture is highly speculative. What is certain is that the initial recontextualization introduced Chinese into the subsequent recontextualizations, the subsequent recontextualizations thus dependent on the summative project.

The summative project placed two requirements on students: a) to demonstrate a relation to their learning in Zack and b) to demonstrate consideration of modes, media and interactivity. Briefly, Helen's project draws upon an unresolved conflict at the novel's end to consider differences in point-of-view. As she explained in the opening of her demonstration, her choice of genre (a newspaper) was partly a response to her peers' interpretation of the physical format of her then-poster, and partly a response to her

peers' sense of the novel as a still unfolding story, a current event with more to follow. One section of her newspaper is a graphic representation of her peers' thoughts as to what will happen next; one section, the bilingual portion, is a summary of the key characters and their perspective on events in the novel. By any traditional assessment criteria, the project is a successful Grade 7 novel study project in its consideration of multiple perspectives and points-of-view.

The summative project's second requirement was that students demonstrate consideration of modes, media and interactivity. Foundations for such work had been laid early in the year, and expanded in students' work across subject areas. Students could draw upon understandings from previous project work - digital, multilingual, spatial, visual, and embodied – and upon three lessons on multimodality for a theoretical understanding of the concepts (see "Term Two"; Goodman, 2006; Kress & van Leeuwen, 2001). Helen's summative project, designed with the knowledge it would be presented to the class, clearly evidences her conceptual and applied understanding. The interior left page of her newspaper, the Margin a collection of individual peer's responses written under a folded flap of black paper and the Centre a summative chart, would be sufficient to demonstrate Helen's success in relation to this second set of criteria. The bilingual text, although clearly relevant to the second requirement, might appear more decorative than functional were it not for two pieces of evidence: the video of the in-class presentation and a later of video of Helen discussing her use of Chinese throughout the year.

The video forming the third phase of Helen's demonstration realizes the contribution of Chinese to the interactivity of her summative project's design. Interactivity is a central design consideration in the left page, the in-class presentation participants recognizing the covered opinions as an invitation to reach and reveal what they and their peers had said. The Chinese text invited no such embodied response; however, within the context of MJ's classroom, Helen clearly understood that home language and use of home languages in textual designs were of interest to her classmates, and would similarly evoke a response. In its second recontextualization, the newspaper's Chinese content was realized in the conversation around the newspaper, the mode, media and interactive dimensions of Helen's design contributing to her peers' expression of interest in her project, and to the presentation's success. The video gives evidence of this.

The use of Chinese during the in-class presentation was the second recontextualization of quotidian knowledge, a second context and a second text distinct from the summative project. The video is a third recontextualization, realized within a reflective text that's Field is the learning that took place in the novel study, the study now a circumstantial element rather than the Thematic subject. As an offering by Helen to a general public, the digital text's embedding of the summative project and of the summative project's presentation is purposed to provide evidence of learning. Thus, the relevance of Helen's quotidian knowledge can no longer be assessed against the criteria for the summative project, but must be assessed against its value to its audience, its demonstration of Helen as a designer, an individual who has developed the capacity to draw upon multiple modalities to realize complex meanings, and who has established for herself a place as a knower, able to communicate ideas, to respond to questions, and to complete tasks that are "pretty hard." She shows herself as someone who can do what her classmates cannot, and she situates this activity in a context of planning, measuring and decision-making, a context in which she exercised judgement in making changes "to make it (her project) better." The contribution of Helen's quotidian knowledge to the digital text is its contribution to the text's public purpose, demonstrating knowing.

There is a further purpose to Helen's language use, one which can only be ascertained by referencing another of MJ's accounts, "Assessment, Grading, Communicating" (http://multiliteracies.ca/index.php/folio/viewProject/261). Within one of the account's demonstrations is video of students commenting on home language use in the classroom. Helen is one of those students, and a portion of her remarks center on the impact of home language use on her mother:

> *My mom like felt really surprised because she never knew that like we actually use Chinese as a display. Like she thought it would be only English. Because at first she didn't want to come because she can't even communicate like but then like after she saw the Math and my Zack, she she knew that like our classroom wasn't just like English standard so.*

First Language
Helen's Perspectives
Assessing, Grading, Communicating
http://multiliteracies.ca/index.php/folio/viewDocument/261/14016

What is indicated here is that Helen's mother didn't want to come to an open house organized by students for their families to show what had been learned over the last term. Her mother understood school as English, and it was only upon seeing Helen's work realized in Chinese that her understanding changed. In all discussions of the research, parents/families were explicitly referenced as one of the publics being addressed by the accounts. In offering her work to the public, Helen could do more than tell her mother that Chinese was a language of classroom interaction; she could warrant her claim by showing her the website. The extent to which Helen's understanding of the public's information needs was consciously or unconsciously shaped by her mother is not something which can be measured or accounted for. However, in a separate reflection, Helen provides at least indirect evidence that this was the case. If so, then the digital text's recontextualization of home language influenced her mother's decision to attend a school event. This is another mark of the text's success.

What, then, of the text's/message's approximation of the student voice? Does the digital text approximate the dimensions of student voice in MJ's classroom laid out earlier, and does this contribute to the text's success? This is clearly the case. The first phase is a description of thinking, the first privileged practice identified from MJ's accounts. The book in the demonstration's second phase extends the description, the visuals an elaboration of the contextual resources upon which Helen drew to complete her work. In this, the meanings realized in the photos parallel the attention MJ paid to contextual resources in "Science Lesson." Interaction, the second practice, comes to the fore in the digital presentation, when Helen's work again mirrors "Science Lesson" in that interaction is communicated in image by Reactors' shared focus on a Phenomenon, rather than through a linguistic or visual realization of an interactive process. The video in the third phase also takes interaction as central theme - with the caveat that the text is construed by viewers as a reflection or second order of experience - for the video is the media in and through which Helen demonstrates her ability to explicate her thinking in response to the needs and interests of her interlocutors. Taken as a textual whole, the digital text is a meta-analysis of the practices in which Helen engaged to produce and present her summative task, a realization of thinking about thinking. Demonstration of this third privileged practice of the student voice underpinned the task which Helen and

her peers were assigned. To an uncanny degree, her text realizes each of the practices of learning that MJ emphasizes in her accounts.

The nature of the assigned task and the register subsequently realized by the text is a key point of difference between Thofiq's and Helen's offerings. Text type/genre is not relevant to the analysis of Helen's digital text, as neither task nor text fits within any category of a traditional academic text type. As a multimodal analysis of her thinking processes, a meta-analysis of thought, all appearances (and appearances is the relevant term here, as the text's spatial and visual elements must be included in the reference) suggest her model for authoring her work is MJ's accounts. In this, Helen's text or message is not simply an approximation of the student voice, it is a realization of a register of "we."

The hypermodal relations of the digital text and the traversals instantiated by viewer's path through the site realize Helen (and her peers) as collaborating in a joint communicative effort with MJ. Though the student texts are easily differentiated by the extent of students' linguistic resources, a near inevitability given the age and grade level of the students, the student voice is not marked by its place in accounts' digital hierarchy, the students' account of the same "ranking" as the teachers' accounts. Nor can it be presumed that the teachers' texts act as a gateway to the students' texts, although the students' demonstration "Links" advises viewers that this is the preferred route. MJ maintained no direct control over the digital form of the students' public accounts, affording full access to the site's multimodal possibilities, and only indirect control over visual, audio, spatial, gestural, and linguistic features of the students' texts, the limitation being the nature of the photographic and/or video record available to the students. Helen's digital text and those of her peers are realized as collective, participants in the foundation of communication that is MJ's larger priority for the student voice.

The textual and visual references across and within demonstrations, the multiple links which criss-cross the students work, simply cannot be understood without extending beyond Helen's text. The very opening of the demonstration, the circumstance of the first phase, "During the process of this project…", has been shown to be an exophoric reference. Yes, there are struggles at times to maintain a consistent stance with the viewer, the complexities of placing text within hypermodal documents further

complicated by the salience of the available linguistic options, interfering with relations between and across documents. First and third person jostle uncomfortably periodically. But cutting across Helen's demonstration to "Links", her peers' demonstrations, and MJ's accounts is "I" talking to a viewer about the learning activities in which "we" engaged, reflecting on learning and showing what "we" learned. Seemingly oblique references to "other photos of this project" acknowledge the multiple viewing paths through the collaborative digital effort. Meanings are distributed across modalities; as in MJ's accounts, intermodal relations are critical to understanding the circumstances of learning. The multiple authors of "we" have harmonized their texts, and though not every note is on key, a shared understanding of context is apparent in the single register.

It is voice that gives relevance and power to Helen's quotidian knowledge. As participants in constructing the communicative foundation of the classroom, Helen and her peers bear responsibility for contributing to the class' communal knowledge. To draw only on resources introduced in the classroom is insufficient; students are expected to contribute the full range of their literacies knowledge/meaning-making practices to the "power of the group," languages only some of what a student may contribute. Equally, she and her peers are expected to take up what is offered by others, to build it into their collective understanding rather than merely acknowledge its presence within the collective. The questions, challenges, and acknowledgements which are evident in the digital presentation and video, and which contribute to the success of Helen's recontextualization efforts, are also of the student voice and also of the messages which are the second and third recontextualization. A context of meaning has been collaboratively constructed, and the texts' register realizes what has been collaboratively built.

However, it would diminish the sophistication of Helen's text, or the texts of her classmates to suggest that they are engaged in home or out-of-school literacies practices. They are not "doing" what they do outside of school. Within a social semiotic framework, it is impossible for such practices to come to school, for the systems through which meaning is instantiated select meanings relevant to the metafunctions of the context, and context is always and ever experiential, logical, interpersonal and textual. Institutional pedagogic contexts cannot "be" the contexts of home, cannot hold the

possibilities for meaning that are the contexts of the non-institutional. One cannot expect Helen to discuss Chinese as a way(s) of knowing in the context of her home, any more than a monolingual English speaker can be assumed to discuss knowing in English (or Englishes) as a home/out-of-school literacies practice. What is demanded of students in approximating the voice of student-in-the-classroom is something far more sophisticated than engaging in home/quotidian literacies practices.

To bring Chinese to her text, Helen must move toward a meta-awareness of the meaning potential of her home language, first understanding its potential contribution to the institutional context, and then remaking her knowledge to realize its pedagogic potential. The practices of the classroom ask Helen to look outward for what she knows, and to remake it as knowledge for the classroom. To succeed in her efforts, Helen must reposition herself, move from learner to knower, take responsibility for realizing her knowledge such that others may learn and know. The video in the third phase of Helen's digital text is a realization of her responsiveness to her responsibilities, and further evidence of the extent to which her digital text/message is an approximation of the student voice.

The contribution of multimodality

The initial impulse in analysing a digital text is to consider its spatio-temporal affordances, the impact of hypermodality on the potential audiences an author might reach, and the complex negotiation between author and viewer over control of the text's instantiation. In the recontextualization of quotidian knowledge, such issues surfaced in the requests within "Links," in Helen's use of referents which could not be understood from her text alone, in the sequencing and organization of the linked elements, and in Helen's comments in a later account regarding her mother's understanding of the classroom. But the more interesting contribution of multimodality to the design of Helen's text is how it enabled her to warrant the contribution of her multilingualism to learning without explicitly laying such a claim. It is this point on which I shall focus.

In the logogenetic unfolding of the digital text, the viewer is unaware until the third phase that Helen's home language was employed in the summative project's design. This was a design choice, for Helen had the material means to visually display the

summative project in whole or in part (in which case the written Chinese text would have been visually salient) and/or to incorporate oral or written Chinese language specific to the digital text (ex. Chinese text in the demonstration's body; audio file in the demonstration; a voiceover of the presentation) in any phase of the work. She did not make these design choices, her construal of the context of production and of the public she was addressing resulting in the existing public text. Clearly, Helen did not draw on her language abilities to speak directly to a public who might be more comfortable communicating in one of the Chinese languages.

Instead, Helen employed her various capacities with Chinese to add further complexity and depth to her representation of learning, and she designed complex modal combinations to realize this representation. Showing learning – in effect, showing a change in one's mental capacities – is a far from simple task, and yet Helen's modal arrangements consistently realize cognitive processes/practices as her central theme. This is, perhaps, the most revealing point of the detailed analysis of Helen's digital text, that she did not revert to a discussion of the novel study or the summative project. The summative project is consistently realized by her modal arrangements as the circumstance of learning, and learning/knowing as the practices of the context. Understanding the contribution of multimodality to the recontextualization of quotidian knowledge is best understood by tracing multimodality's contributions as instantiated in the phases' linear progression.

The modal designs of each phase carefully realize evidence which other modes cannot:

- the linguistic text of the first phase describing the intramental processes that cannot be perceived or sensed;
- the visual and linguistic elements of the book affording a far richer description of the summative project's context of production than could be provided through language alone, with the viewer's control over the pacing of the visual information (though not the ordering) affording time for close examination of the images;
- the images, linguistic text, ordering, and timing of the presentation functioning intermodally to realize the remeaning of the summative

project, the project now of the context in which the text of the in-class presentation is realized. The in-class presentation is now the circumstance of the near-mental processes described in the digital presentation, the linguistic mode essential to the realization of the behavioural processes, and the images warranting the claims of interaction in their realization of a Phenomenon shared by the Reactors. Images realize the shifting circumstances of thought; the demonstration's spatial and sequential features, including the spatial configurations of the demonstration (increasing right margins; shortening dividing lines), realize the narrowing time-space of context; language again realizes intramental dimensions of processes that cannot be realized otherwise.

Having established the in-class presentation as the circumstance of the interactions, and the students as engaged in interactive, near-mental behavioural processes, Helen next offers the video. The multiplicity of modes afforded by video allows Helen to demonstrate several dimensions of her Chinese language capacities:

- the ability to write an extended paragraph, as realized visually in her gestures toward the text as she "reads" in English;
- the ability to translate in the moment, the oral overlap of her translation and Jason's commentary warranting the difficulty of her task;
- the ability to work across Cantonese and Mandarin, her conversations with Holly referencing Chinese school (Mandarin) and her peers' knowledge of language (their home dialects of Cantonese), the oral and linguistic equally important to the viewer's construal of the exchange;
- an awareness and understanding of the complex honorifics of the Chinese languages, evidenced in her explanations and references to the familial relations of characters in the novel, the visual and linguistic again unfolding in the time-space of the in-class presentation;
- an ability to interact around the language, the English interaction with her peers not affording the opportunity to observe an exchange in Cantonese

or Mandarin, but linguistic dimensions of the video realizing a capacity with oral as well as written language.

However, to recognize these dimensions of the exchange as knowing, the viewer must construe the video as a second order and not a first order of experience, as a commentary/reflection on learning/knowing. This requires that the video be construed as an element within the larger multimodal design, the complex modal relations further evidence of Helen's enhanced capacities as a designer. The video cannot independently realize the required degree of abstraction. Following the sequence of the demonstration, if the in-class presentation had not previously been realized as the circumstance of shared activity, then the exchange in the video could not be understood as circumstance. If the subject had not previously been identified as cognitive and/or near mental processes, then the examples of "look," "question" and "read" realized within the video would unlikely be identified as such. Without the meanings previously offered in Helen's digital text, the videoed interaction would be merely a sequence of dialogue, interesting but not evidence of the validity of the categories realized earlier in the demonstration. In other words, if visuals had not previously realized circumstance, if the text's spatial arrangements had not realized the continued narrowing of focus, and if complex intermodal relations had not previously realized abstract categories of practice, then nothing in the video would support the viewer's construal of the video as an exemplification of thought. The role of Chinese in Helen's complex text, its contribution to its intermodal design and its place in the exemplification of the privileged practices of the student voice, would be difficult if not impossible to construe. The contribution of multimodality to the recontextualization of Helen's quotidian knowledge is the resources it affords Helen for realizing the circumstances and practices of thinking, and for demonstrating the contribution of her quotidian knowledge to practices of thought.

Spencer's Project at Lord Byng

The Student Voice

Amy Hughes' classroom is located in the southwest corner of Lord Byng's top floor, at the end of the hallway in a relatively new addition to the building. Windows are interspersed along the south and west walls; bulletin boards and wall space in-between are filled with current and past student work. Projects also hang from the ceiling and sit on windowsills, as is needed for their display. A whiteboard along the south wall is divided into columns, one column per class, and lists upcoming tasks and due dates. A blackboard on the east wall is often covered by a pull-down screen, as Ms. Hughes makes frequent use of the overhead projector when instructing. The projector sits on a cart at the open end of the large horseshoe formed by the student desks, leaving sufficient space for her to move easily into the center and around the interior perimeter. A TV is mounted from the ceiling in the southwest corner, the DVD player below.

The entrance to the room is in the northeast corner, and Ms. Hughes' desk is directly opposite the door, the side open to students entering the room. The desk is covered in paper, and the countertop of the cupboard behind her is piled with feet of books, available for students to borrow for short or extended periods of time. Scissors, staplers, tape, pens, and various other supplies flow back and forth across her desk, as students find what they have forgotten and return what they've borrowed. Her laptop computer sits to the immediate left of her desk, on a small table.

In the center of the space created by the desks are large covered "tables", carpenter's horses covered with sheets of plywood. In addition to small stacks of books, not uncommon on otherwise unoccupied flat surfaces, the surface is spread with a 1000+ piece jigsaw, in some state of completion. Outside the horseshoe, at several points around the room, are older desktop computers sitting on small tables, used primarily by designated students[76] for in-class writing assignments and exams. Much like Jeannie's

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[76] "Designated" is the common term used by VSB teachers, if not all teachers in British Columbia, who are officially designated as having special status. Typically, they are students who are designated by the standards of the Ministry of Education and for whom the school receives additional funding, including students receiving support for English as an additional language,

and MJ's classroom, there is a constant flow of students during and outside of class hours, some just hanging out, some working on the jigsaw, some visiting with Ms. Hughes, and some attending meetings for the various student clubs and/or extracurricular events in which she is involved. Her position as Department Head contributes to the number of adults in the flow - other English teachers in the Byng Arts program, counselors, and administrators.

A Preamble

Across all of the high school accounts, not only Ms. Hughes', there is a pattern distinctively different from Jeannie's and MJ's work. Though definitive statements can never be made on the basis of a small, exploratory study, and the research subjects' employment within a single English department negates all claims as to their representativeness, it is not a logical stretch to see these differences as reflecting the organizational differences between elementary and high schools. The students in Jeannie's and MJ's classrooms were their students; the students in Ms. Hughes' classroom and in the classrooms of her counterparts were their English or Social Studies students. Thus, it is perhaps not surprising that there are no holistic statements regarding learning, thought, knowledge and/or development in Ms. Hughes' accounts, In a similar vein, there is much less evidence of responsiveness to student diversity and much greater emphasis on the expectations of students.

But before accepting this as an inevitable practical reality, an unavoidable outcome of the organization of secondary education, it is worthwhile considering the available discourses of secondary education, and how these might preclude or render "unthinkable" more holistic representations of pedagogic practice. Within the time frame of the classroom observations, there were at least three occasions in which I observed Ms. Hughes' direct involvement in assisting a student with a personal crisis, a matter unrelated to teaching English. In all three focal classrooms, the research subjects were engaged in a maze of interactions with in- and/or out-of-school counselors, strategizing support for students who were struggling academically and/or personally. Traces of the

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those with hearing impairments, and other forms of learning challenges. The term may also be used for those with permission to use a computer for examination/assessment purposes.

nature of these discussions, the range of resources available at three very different schools, the teachers' histories within the school and the VSB, and the resources they had available outside their immediate professional environment appear in the accounts of all three focal teachers. However, I wonder if the difference in how we envisage an elementary teacher as entrusted with a student, and a secondary teacher as entrusted with a subject is not also in evidence in these accounts, for differences in dominant discourses will inevitably be reflected in the classification and framing rules which define voice, recontextualized in the voice of teacher as well as student-in-the-classroom. This does not suggest that the accounts are inaccurate, it only acts as a reminder that voice and message are distinct. The high school accounts make few claims regarding students' general academic and/or social well-being, but images of the students at work may warrant what is not explicitly claimed.

Educational Priorities and Expectations

> *Grade 8 students in the Byng Arts Mini-School English (MIEN 8) use either music, drama, or a visual art form to represent one of Shakespeare's sonnets and demonstrate comprehension and close reading of the text.*

> *Context with Shakespeare: After a month two month unit on Shakespeare's Romeo and Juliet, Grade 8 students were assigned the task of making meaning of a Shakespearean sonnet of their choice through their art. The final project would demonstrate their understanding of key themes and they would be required to present their interpretations to the class and explain the rationale used in the creation of their interpretation. See project handout.*

> Byng Arts (MIEN 8): The Shakespearean Sonnet through Multimodal Analysis
> Project Description
> http://multiliteracies.ca/index.php/folio/viewProject/222

Ms. Hughes' teaching load for the 2006-2007 school year included two Byng Arts classes (Grade 8); one enriched English class (Grade 11) and one Writing class (Grade

12), offered to mainstream and Byng Arts students; and three mainstream English classes (one Grade 8 and two Grade 12). Syllabi were identical for same-grade courses. The five accounts which Ms. Hughes contributed to the site are organized exclusively by assignment, rather than class:

- Grade 8 multimodal analysis of Shakespearean sonnet; ;
- Grade 11 computer mediated literary circles;
- Grade 12 multimodal thematic literary analysis of "In a Grove" and Rashomon/"Rashomon";
- Grade 12 free assignment (two accounts)

Although her accounts center on assignments rather than classrooms, Ms. Hughes is similar to MJ in that her accounts generally represent "how it is" rather than desires. Each account includes, in detailed or general form, the expectations or requirements for the assignment, and it is from these assignment descriptions that one may construe the overarching educational priorities for the voice of student-in-the-classroom.

Figure 39. Clausal breakdown – Shakespearean Sonnet

1   Grade 8 students in the Byng Arts Mini-School English (MIEN 8) <u>use</u> either music, drama, or a visual art form

2   <u>to represent</u> one of Shakespeare's sonnets

3   and <u>(to) demonstrate</u> comprehension and close reading of the text.

4   Context with Shakespeare:

5   After a month two month unit on Shakespeare's Romeo and Juliet, Grade 8 students <u>were assigned</u> the task [[of <u>making</u> meaning of a Shakespearean sonnet of their choice through their art.]]

6   The final project <u>would demonstrate</u> their understanding of key themes

7   and they <u>would be required to present</u> their interpretations to the class

8   and <u>(would be required to) explain</u> the rationale [[<u>used</u> in the creation of their interpretation]].

As seen above, the project description shares with the viewer the expectations of students for the Shakespearean sonnet assignment. The opening clause sets the context for the assignment, "music, drama or a visual art form" the Medium that the students are to use in their work. The assignment's ostensible purpose is the representation of a sonnet but the task they are given is "making meaning" (Line 5), the circumstance of Manner "through their art" - located within the embedded clause - again positioning media/modal use as the means rather than purpose for the activity. The identifying (Lines 3, 6 and 7)

and verbal:semiosis processes (Line 8) point to "comprehension and close reading of the text", "understanding of key themes" and the ability to communicate "the rationale used in the creation of their interpretation" as indicators of students' success. Nominalizations of cognitive processes ("comprehension", "understanding", "interpretation", "rationale") perform as the New, again emphasizing the centrality of meaning-making to the student voice. It is meaning-making that is Ms. Hughes' core priority for the student voice, the choice of media/modality providing students with the means to realize not only meaning but their processes of meaning-making in relation to texts.

Table 7. Process types – Shakespearean sonnet.

Line	Material	Behaving	Sensing	Relational	Verbal
1	use *[creative]*				
3				to represent *[intensive]]*	
4				to demonstrate *[intensive]*	
6-7	were assigned *[transformative]*				
7	making *[creative]*				
9				would demonstrate *[intensive]*	
10					would be required to present *[semiosis]*
11					(would be required to) explain] *[semiosis]*

The same emphasis is evident in assignment hand-outs, the contrasts in the realization of Ms. Hughes' priorities intriguing but not surprising. In a format that will be recognized by many, the purpose of the Grade 11 literary circles assignment begins with a brief preamble, followed by four points:

Purpose:

You are working in the online discussion environment so that there is an equal opportunity for each of you to be "heard" – something that in class discussion does not always allow due to the number of students in class.

To engage in academic discussions and work on the tone and level of the literary analysis required of such discourse.

To learn from each other and feel free to pose questions.

To achieve a deeper understanding of the novel as a form and the novel of your choosing, in particular.

To enjoy literary discussion in and outside of class.

The thematic Subject shifts from "students" and "projects" to "you", Ms. Hughes speaking directly to her students; however, in a fashion similar to the project description, the opening clause sets out the assignment's context, the Circumstance "in the online discussion environment" (Line 2 - enhancing:Location) situating the activity in a digital space. Again, as in the earlier excerpt, context may be construed as a resource for meaning-making, the conjunctive adjunct in Line 3 ("so that") establishing the context's purpose as opportunity, the spatio-temporal dimensions of on-line affording what "in-class discussion does not always allow." In contrast to the project description, in which the contextual resources are realized as a list of possibilities, this specific resource is directed at "each" student, the shift in Subject-Person from non-interactant ("students") to interactant ("each of you") and the realization of "opportunity" as Existent or "fact" leading to a construal that this is the resource that is to be used. That context provides resources for meaning-making is crucial to the realization of student voice in Ms. Hughes' classroom.

Figure 40. Clausal breakdown – Computer-mediated literary circles.

1   (The) Purpose <u>(is)</u>:

2   You <u>are working</u> in the online discussion environment

3   so that there <u>is</u> an equal opportunity [[for each of you <u>to be "heard"</u> || - something that in class discussion <u>does not</u> always <u>allow</u> due to the number of students in class]].

4   (You are) [[<u>To engage</u> in academic discussions || and <u>(to) work on</u> the tone and level of the literary analysis [[<u>required</u> of such discourse]]]].

5   (You are) [[<u>To learn</u> from each other || and <u>(to) feel</u> free [[<u>to pose</u> questions]]]].

6   (You are) [[<u>To achieve</u> a deeper understanding of the novel as a form and the novel of your choosing, in particular]].

7   (You are) [[<u>To enjoy</u> literary discussion in and outside of class]].

Within the context of the student assignment, it is understood that "you are" has been ellipsed from the ranking clauses in Lines 4 through 7, each of the non-finite clauses rank-shifted to perform as a Token identified by the relational process "are".[77] The six assigned responsibilities are of two general orders: the order of practice and the order of reflection. As practice will be addressed separately, it is Lines 5-7 that are of interest here. It is in Line 5 that the required achievement is made explicit, "achieve" a metaphoric realization of a material process extending possession of a Goal. This Goal, "understanding", reaches beyond the immediate circumstantial Matter "of the novel of your choosing", to the literary category "novels." The Goal's extension beyond the immediate assignment is reinforced in Line 6, in which the circumstantial Location of literary discussion (not "literary circles") is "in and outside of class." This is consistent with the student capacity realized in the embedded clause in Lines 3, the circumstantial Cause "due to the number of students in the class" suggesting that time rather than ability blocks students from being "heard." Students are realized as already possessing some degree of understanding beyond what they have demonstrated in-class; the Goal is "deeper understanding", a greater capacity for meaning-making than exists at the project onset. The priority for the voice of student-in-the-classroom is exhibition AND deepening of a capacity for meaning-making, an existing and future capacity, the privileged voice realized but not defined by the spatio-temporal dimensions of the classroom.

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[77] The ellipsis of "you are" is a less typical analysis of the clause structure; however, it is consistent with Ms. Hughes use in the classroom. Interestingly, the realization adds an element of modality that would otherwise be absent, the modality consistent with other descriptions of student performance.

Table 8. Process types – Computer-mediated literary circles.

Line	Material	Behaving	Sensing	Relational	Verbal	Existential
2	are working *[creative]*					
3						is *[neutral]*
3		to be heard *[near mental]*				
4	does not allow *[transformative]*					
5	to engage *[transformative]*					
5	to work on *[transformative]*					
7		to learn *[near mental]*				
7			to feel *[perceptive]*			
8	to achieve *[transformative]*					
10			to enjoy *[emotive]*			

Before proceeding, it is worthwhile noting the pragmatic dimension of Ms. Hughes' priorities for the voice of student-in-the-classroom, as realized in differences in modality in the two excerpts analysed here. The imperative of the student hand-out, the power of the teacher to command the processes "engage", "work on", "learn" and "achieve", is nowhere in evidence in the Shakespearean project description. Instead, "demonstrate", "present" and "explain" are modulated by "would", realizing that these are the expected practices of the mandated task. In the reality realized in Ms. Hughes' account, the teacher controls the priorities and assigns the tasks; but cannot compel the meaning-making practices the tasks suppose. To parents and other educational stakeholders, she commits to no more.

Practices

Two practices, both related directly to the priority Ms. Hughes places on meaning-making for the student voice, repeatedly surface in Ms. Hughes' accounts: analysing and creating. Although the distinction is not absolute, a different mode realizes each practice. Halliday (2008) has observed that the visual and other non-linguistic modes are often parasitic on language, as is the case on this occasion. Thus, the first practice addressed is the one realized in language, analysing.

Analyzing

"Rashomon/'Rashomon' & 'In a Grove'" (hereafter referred to as "Rashoman") is the most extended and complex account authored by Ms. Hughes, and includes a mix of presentations and galleries, photos and student work, and process and final product examples. The project required students to undertake a multimodal thematic analysis of two short stories by Rynosuke Akutagawa, and of Akira Kurosawa's film "Rashoman". The only mandatory requirement related to the students' modal/media choices was that their project had to include a single sheet of white poster board.

The account's audio selections are clips of classroom interaction, this first element an exchange initiated by the student about the assignment's requirements:

> *Ms. Hughes:* *Question.*
>
> *Student:* *Uh, I'm not sure what what kind of pictures we should put on that poster.*
>
> *(pause)*
>
> *Ms. Hughes:* *Do you have to put pictures on?*
>
> *(pause)*
>
> *Ms. Hughes:* *You can cut the poster board up into little, little disks for all I care as long as you can explain to me why they're cut up into disks. The rule of the poster board is you must start with a poster board. It doesn't need to look like a poster board when you're done. (pause) Okay? You can fold it,*

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> *bend it, spindle it, mutilate it, as long as what you're doing*
>
> *with it is towards a purpose. If you are putting images on, I*
>
> *would assume that there's a reason for it, that they're a key*
>
> *image, why, that's explained...*

Student: *Hmmm.*

Ms. Hughes: *The idea here is to go beyond just a flat poster board. Use*

            the poster board to do what you need it to do. It's material,

            it's not a poster board. That make sense?

Rashomon/"Rashomon" & "In a Grove": A Multimodal Thematic Literary Analysis
How to Use the Poster Board
http://multiliteracies.ca/index.php/folio/viewPresentation/247/151

The audio is a teacher-student exchange, the student having gained Ms. Hughes' attention and opened the sequence by expressing uncertainty regarding the assignment. With the exception of Ms. Hughes' comprehension check, the recording is largely one extended speech turn, in which Ms. Hughes remakes the information offered by the student, substantially altering how the obligations of the assignment are realized. For the purposes of investigating voice, Ms. Hughes' portion of the exchange will be analysed as a single unit.

Modality and the process types correlating with each participant are key to understanding "analysing" as a privileged practice of voice of student-in-the-classroom. In ranking clauses in which the student is realized as the thematic Subject/addressee ("you"), the degree of obligation is low and an implicit subjectivity realized in the modal item "can." In other words, in communicating the requirements of the assignment, Ms. Hughes has rejected a certainty offered by the student (that pictures must be used) and replaced it with a series of possibilities, attaching no significant positive or negative valence to any. With only one or two exceptions, the Event in the verbal groups is a material:transformative:elaborating process, the student is Agent, and the verbal group realizes a litany of possibilities as to what one might do with the poster board (which was not the subject of the student's query). Even here, despite the specific, material dimension of the processes, the open-endedness of the requirement is maintained, the verbal group realized as intransitive and without an indirect object in all but Line 1. Where the student had closed the range of opportunities available for realizing meaning, Ms. Hughes can be

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construed as reopening them, reimagining but not relimiting the physical properties of the student work.

Figure 41. Clausal breakdown – Poster board.

1   You <u>can cut</u> the poster board up into little, little disks [[for all I <u>care</u>]]
2   as long as you <u>can explain</u> to me
3   why they'<u>re cut up</u> into disks.
4   The rule of the poster board <u>is</u> [[you <u>must start</u> with a poster board]].
5   It <u>doesn't need to look like</u> a poster board
6   when you'<u>re</u> done. (pause)
7   Okay?
8   You <u>can fold</u> it,
9   (you <u>can</u>) <u>bend</u> it,
10 (you <u>can</u>) <u>spindle</u> it,
11 (you <u>can</u>) <u>mutilate</u> it,
12 as long as [[what you'<u>re doing</u> with it]] <u>is</u> towards a purpose.
13 If you <u>are putting</u> images on,
14 I <u>would assume</u>
15 that there'<u>s</u> a reason for it,
16 that they'<u>re</u> a key image,
17 why, that'<u>s</u> explained…
18 The idea here <u>is</u> [[<u>to go</u> beyond just a flat poster board]].
19 (You can) <u>Use</u> the poster board <u>to do</u> [[what you <u>need</u> it <u>to do</u>]].
20 It'<u>s</u> material,
21 it'<u>s</u> not a poster board.
22 (Does) That <u>make</u> sense?

However, modality changes dramatically when "you" is not the thematic Subject and cognitive processes are implicated. The more interesting examples are those instances in which the project/poster board is Subject and/or in which an existential process is realized. The ambiguity and low degree of obligation is replaced with near certainty in Line 4, the obligation of the Token "rule" reemphasized by the indicative "must" within the embedded clause serving as Value. There is an absence of modalization, and therefore a conferral of "fact," when relational processes confer an Attribute on the project. Images on the poster are assumed/expected to be "key images" (Line 16), their role as key images "explained" (Line 17). In Line 12, where the embedded clause "what you're doing with it" substitutes for the poster board/project, "is

towards" may be construed as "has" or "possesses", the possessive Attribute being "purpose." Thus, the poster board/project is unambiguously signed as necessarily representing the student's processes of analysis. The conjunctive adjuncts (Lines 2 and 12 - "as long as") and conjunction (Line 13 - "if"), which serve as textual Theme and establish the causal-conditions or limits of the student's material choices, locate choice within parameters of having reason or purpose. Students are realized as Agents with control over the materiality of their project, with the freedom to "use the poster board to do what you need it do" (Line 19), but "need to do" is explain and reason. There is no mitigation of this obligation to analyse.

The value Ms. Hughes' assigns to analytical practices that contribute to personal meaning-making is equally evident in whole class discussion. In audio from another "Rashomon" presentation, she and her students can be heard comparing the visual and written texts after viewing a segment of Kurosawa's film. The clip opens with Ms. Hughes speaking:

> *I just think it's very fascinating to see how, how one person, two people, three people, we've got Kurosawa… interpreting... Kurosawa and a screenwriter interpreting two different stories by an author and being narrated by yet another reality, how we sort of fuse these things to make meaning for ourselves and what I'm interested in is how we then take all these sort of threads, and weave them together and take them back to the text and see how, if that helps us have better eyesight…it's like eating carrots, I just, I need some supersight when you do your own text reading, because you, you, you learn, like Danae said, you notice things that you didn't notice before*

Rashomon/"Rashomon" & "In a Grove": A Multimodal Thematic Literary Analysis
Discussion Regarding the Film
http://multiliteracies.ca/index.php/folio/viewPresentation/247/190

Whereas the student was the thematic Subject in the earlier excerpt, Ms. Hughes and her thoughts are central to this exchange. The mental:cognitive projection "I think" (Line 1) establishes the subjectivity of what follows, the existential clause qualified by its location within Ms. Hughes' thoughts. However, this is a classroom, and the exchange exists within a unit of study culminating in a major project. Whether or not a student chooses to listen and/or speak, the teacher's thoughts may be construed as having greater importance than others', at least to students concerned with their academic performance. "I think" marks a priority for students sorting through the unit's requirements.

What is thought – what is fascinating - unfolds over the speech turn. The sentient participant shifts from "I" to "we", the material:transformative:extending:possessive process in Line 3 extending metaphoric possession over the realities offered in the three texts, these realities a contextual resource for the discussion. The realities are materials to be worked, the Agent "we" (Line 4) again engaged in transformation, the non--finite clause in Line 5 realizing the purpose for working these "things." The purpose, again, is meaning-making.

Figure 42. Clausal breakdown – Discussion regarding the film.

1   I just <u>think</u>

2   it'<u>s</u> very fascinating [[<u>to see</u> how, how one person, two people, three people]],

3   we'<u>ve got</u> [[Kurosawa…<u>interpreting</u>… || Kurosawa and a screenwriter <u>interpreting</u> two different stories by an author || and <u>being narrated</u> by yet another reality]],

4   how we sort of <u>fuse</u> these things

5   <u>to make</u> meaning for ourselves

6   and [[what I'<u>m</u> interested in]] <u>is</u> [[how we then <u>take</u> all these sort of threads, || and (how we) <u>weave</u> them together || and (how we) <u>take</u> them <u>back</u> to the text || and (how we) <u>see</u> || how, if that <u>helps</u> us <u>have</u> better eyesight]]…

7   it'<u>s</u> [[like <u>eating</u> carrots]],

8   I just, I <u>need</u> some supersight

9   when you <u>do</u> your own text reading,

10   because you, you, you <u>learn</u>,

11   like Danae <u>said</u>,

12   you <u>notice</u> [[things that you <u>didn't notice</u> before]]

But here, Ms. Hughes' more specific interest is in a series of acts, the "how" of shared practice. In Line 6, "we" take and weave and take back to the text the

interpretations offered by the authors. The metaphoric manipulation of ideas parallels the physical manipulation of the poster board - the "material" is a required beginning; the material is altered; the material is a point of return. The processes of analysis offer the possibility of insight into the material itself, "helps us to have better eyesight" (Line 6), for material processes (literal or metaphoric) may yield perception. Note, however, that the possessive "helps (to) have" does not limit the developing capacity to the immediate text(s), but confers possession of a more general ability.
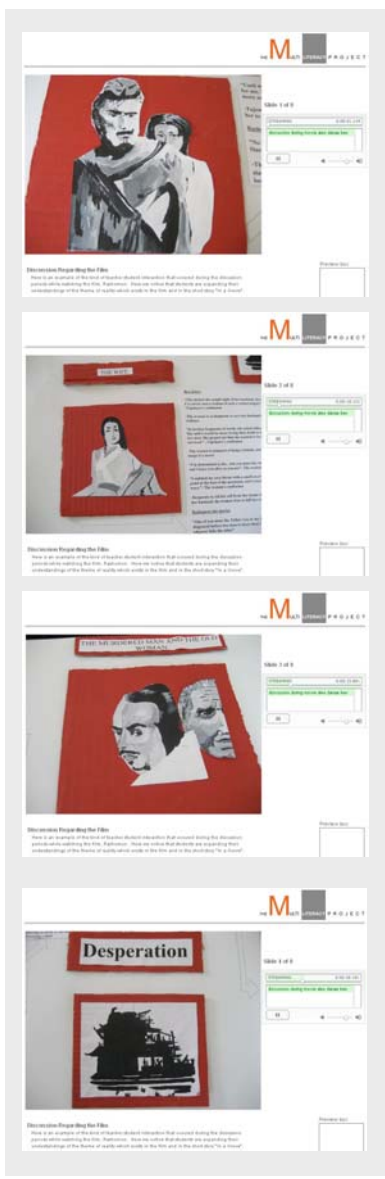
At this point in the lesson, the thematic "we" dissolves back into the thematic Subjects "you" and "I", and the high modality of "need" (Line 8) renders objective what could previously be inferred, that what Ms. Hughes thinks and finds interesting is a requirement of students' text reading. If the earlier points were an attempt to persuade, the pretense of voluntariness now has been removed. However, Ms. Hughes offers one last warrant as to the value of such practices before returning the floor to the students, employing the remade categories of teacher and student to draw on the voice of a peer (Danae). In what might be construed as sensitivity to the credibility of a teacher's claims, it is the student's claim to increased perception that closes the turn, after which Danae again takes the floor.

The point was made earlier that accounts authored by high school teachers differ from those authored by elementary teachers. One of the differences is the degree of detail these teachers provide regarding their pedagogy, though their objectives are clearly and succinctly communicated. However, from the classroom audio included in the "Rashomon" presentations, it is possible to construe practices associated with Ms. Hughes' educational priorities, the valued activities of the voice of student-in-the-classroom. In the discourse of the classroom, the priority placed on meaning-making co-exists with an emphasis on analysis, whether speaking with a student or speaking with the class. The manipulation of materials and ideas is endemic to processes of meaning-making, the students expected to be able to share and warrant the reasoning behind each choice. It is the cognitive practices of analysis that are highly prized within Ms. Hughes' classroom, and the central practice of the privileged student voice.

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Creating

If the first valued practice is realized in audio, the second is realized in image. The eight visuals which follow are also from "Rashomon – Discussion of the film," the entirety of the presentation comprised of photos, audio of a class discussion (the source of the earlier excerpt), and the presentation description. There are no annotations of the individual images, and the viewer is left with the relatively open-ended task of construing the intermodal relations of the three elements. The presentation runs 2 minutes 11 seconds, and Ms. Hughes chose to upload a single audio file, with the time on each of the eight images evenly distributed. All of the images are relatively the same size, as the software adjusts uploaded images to fit the presentation frame. Three student assignments are represented, some of the images appearing to be crops and enlargements of another.[78] Although there is no explicit connection between the voices of the students heard in the audio and the three projects shown, the name of the audio file includes the proper names of three students – Alex, Danae and Ben – and one might conjecture that one of these students worked on each of the assignments.

One may also surmise from the audio's content and from the content of the account as a whole that the images and the audio are from two different points in the unit. The title of the presentation "Discussion of the film" suggests that the class has watched the film relatively recently, perhaps in the same lesson. The

Figure 43.
Rashomon presentation 1

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[78] The students' work will be referred to as assignments, so as not to create confusion with references to "projects."

student projects, however, incorporate images and direct quotations from the film (see Slide 2), evidencing a time lag between the discussion, and the creation and display of the assignments. Thus, the meaning being signed by the presentation is not "how-to" nor is it a narrative. It is a more complex realization of how meaning was made throughout the unit. But the point of returning to this presentation is to examine the privilege conferred on the practice of creativity, and the images are the most relevant data for this purpose.[79]

There were three requirements of the student assignment:

1. Conduct a thematic analysis.
2. Draw upon all three texts covered by the unit.
3. Use a piece of white poster board.

Not unexpectedly, the assignments selected by Ms. Hughes for her presentation meet all three. Beyond that, though, the differences are significant. To begin, the texts realize two distinct structures of conceptual representation. Drawing on Kress and van Leeuwen's visual grammar, the assignment represented in Slides 5 is easily classified as an analytical process, "neither a vector (narrative process) nor compositional symmetry and/or a tree structure (classification process)" in evidence (p. 89). The assignment realizes Possessive Attributes of the three texts, but the texts' abstract nature and the assignment's requirements make it difficult if not impossible to depict the Attributes as part of a visual whole, suggesting the thematic analysis is realized as an unstructured process. "Darkness vs. Light", the assignment depicted in Slides 6 through 8, displays a visual and spatial symmetry in its thematic representation, but the lack of Superordinate/Subordinate relations suggests it is also realizes an unstructured analytical process. In contrast, the third assignment, shown in Slides 1 through 4, is decidedly symmetrical, a stylized black and white image of the temple located in the center of the poster with the title/common theme "Desperation" in large letters immediately above. Four black and white images of characters are placed in the four corners of the poster (see also "Student discussion of the theme and project" - http://multiliteracies.ca/index.php/folio/viewProject/247), quotes associated with each character/set of characters grouped under a minor sub-heading that identifies the source

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[79] The distinction between "creativity" and "creating," a privileged practice of the student voice in Jeannie's classroom, is deliberate.

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text. The organization suggests a classification rather than analytical process, the non-tree structure leading the viewer to construe a Covert Taxonomy in which characters realize sub-classes or archetypes of desperation experienced by characters. Thus at the macro level, the examples diverge substantially in their textual organization.

Figure 44.
Rashomon presentation 2
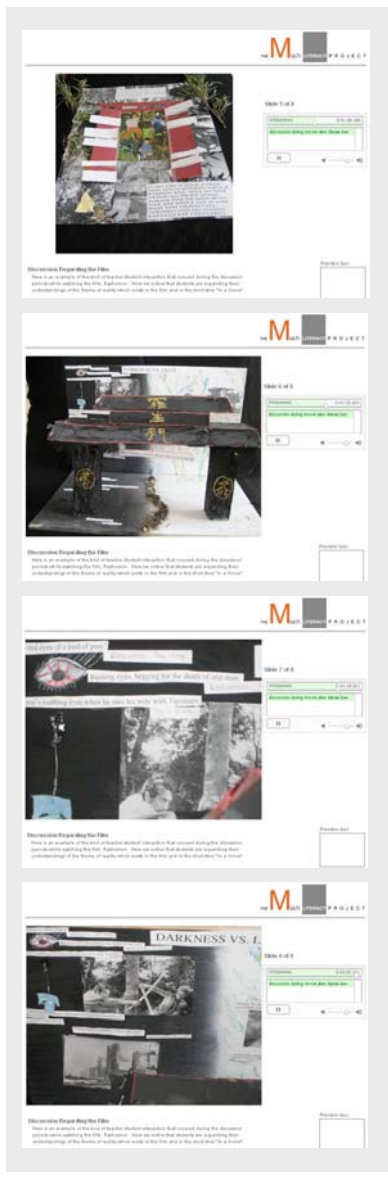
Significant differences are also evident in the modal distribution of meaning. The images in "Desperation" sign Subordinate categories to the Superordinate "desperation." To some degree, they duplicate information available in major sub-headings identifying the characters. However, the stylized images are also selections from alternative characterizations offered in the three texts, each text affording the students at least one alternative. As selections but also as stylizations, each image performs an additional role as an embedded analytical process, the salient features of the images extending or adding detail to students' analysis of the reality of a character's desperation. Quotations from the three texts expand information offered by the visual, the connection between images and specific text blocks made explicit by an arrow between the two. However, despite the arrows, it is questionable whether the linguistic text, the quotations and the interpretive comments immediately below, can be considered as part of the "text" of the image. They are, at best, loosely coupled, sharing a topic and little more.

Instead, the arrows appear to function as signposts that direct the flow of the reader's attention from image to script, language a distinct phase in the larger text of the poster

rather than integral to the images themselves.[80] Images duplicate linguistically realized meanings at the level of textual organization, but at more delicate levels of meaning, language and image realize meaning independently.

Whereas language and image diverge in "Desperation," the meaning resources of quotes and small images increasing converge in "Darkness vs. Light." The visuals – photos, found objects, drawings – enhance quotations, the intermodal relations effectively a multimodal apposition. Parallel quotes from all three texts appear to cluster in relative proximity to drawings and to related images from the movie, realizing supporting evidence for the students' analysis. At less delicate levels of analysis, at the level of the assignment as a textual whole, modal distributions are also unlike "Desperation." The viewer "reads" the text though the temple gate, the gate's spatial dimensions framing the theme "darkness vs. light" as a single idea rather than two separate constructs. The model's distribution of black and white, realized in visual and spatial modalities, is capable of conveying the theme independent of the title, a function that the central image in "Desperation" is unable to perform. The quote suspended from the arch "Now I need to worry about my own Fate" plays a subservient role to the visual, the temple gate the Ideal (perhaps life's metaphoric gateways) and the quote the Real, the character's fate.[81] The assignment presents as a whole, the analysis viewed through the singularity of the gate, and the text providing little direction as to a viewing path. These differences go beyond the differences in the assignments' dominant processes, the visual, linguistic, and spatial modalities performing significantly different roles in the meaning relations of the text.

A final set of differences in the assignments is perhaps the most obvious, differences in what O'Toole refers to as the modal functions (in contrast to modality) of

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[80] "Phase" is used by the those working within an SFL frame to describe "stretches of text in which there is a significant measure of consistency in what is being selected ideationally, interpersonally and textually" (Gregory in Cloran, Stuart-Smith & Young, 2007, p. 663). In other words, a phase is a sub-unit of a larger text, a unit that can be identified by its semantic and lexicogrammatical consistency, but which exists within the larger unit of register, a unit of abstraction applied to the text as a whole – in this case, the poster.

[81] As noted earlier in the thesis, the visual grammatical relation of "Given/New" as proposed by Kress and van Leeuwen is not universally accepted by multimodal theorists, and Kress and van Leeuwen have themselves pointed to potential of culturally embedded differences in the frequency of use and meaning construed by such relations (2006). However, eye movement studies do seem to support a relatively general construal of Given/New to top-bottom if not the left-right positions (Bateman, 2008).

painting and sculpture (1994). Standing as evidence of creativity, it is not necessary to discuss the modal meanings realized in each text. Instead, it is enough to observe the significant differences in scale, line, color, expressiveness, gaze/address and solidity of the assignments, a conversation that might be further extended in relation to Slides 4 through 8 to consider compositional functions of dimension (two vs. three), material and proportion. These are by no means less important differences between the three examples, only (perhaps) the most salient, and so the obviousness (if not the obviousness of their meaning) negates need for further elaboration.

Two sections of Grade 12 English completed the Rashomon assignment. Three assignments are included as examples in this presentation. All three meet the requirements set out for the assignment. All three differ significantly in their textual processes, in the distribution of meaning across modalities, and in the modal functions of the text. If the audio accompanying these images realized the centrality of analysing to the student voice, then the images must surely be understood as realizing the privilege assigned to creativity, for despite the lack of explicit requirement, it is difference rather than similarity that is foregrounded in these assignments.

However, there is nothing here to suggest that creativity is valued for its own sake. As exemplars of final output, the assignments demonstrate what is created by the analytical practices of the classroom, the meanings generated through engagement with the texts. They are made, "woven" of material and intellectual resources that students brought to class and which Ms. Hughes offered in the classroom, their uniqueness dependent upon the meanings brought by the students, not the texts themselves. The co-presence of image and audio suggests creativity is valued not so much as practice but as sign, creativity signaling that analysis has generated meaning for the students, not merely reproduced meanings offered by Ms. Hughes. The success of her pedagogy, the students' achievement of a deepened capacity for meaning-making, can only be assessed through the students' creative acts. The student voice is creative because creativity signals that meanings are their own.

Relations

The organization of the high school accounts, their focus on assignments and their objectives, affords few opportunities to examine the voice of the student as it pertains to the relations of the classroom. The photos and classroom audio in "Rashomon" are among the few exceptions, allowing an oblique window into classroom dynamics. The most direct vantage, however, is a gallery in "Literacy Circles," which tellingly develops in-class discussions as its topic, the Theme in Line 1 "In addition to the regular online, asynchronous discussions" realizing the Circumstance of the on-line discussions as the point of departure for the information that follows. Peer interaction is the pedagogic task, "online asynchronous discussions" the project's graded product, and the topic (an assignment) is realized in a manner congruent with other high school accounts, despite what it reveals about relations.

In Class Discussion Groups Supporting Online Discussion

In addition to the regular and ongoing online, asynchronous discussions, students meet in their groups during class time to continue their discussions face to face. This more traditional use of group work seems to provide a more personal connection to fellow group members that appears to enable a more trusting and online discussion environment. Many students have expressed that meeting face to face helps them to think through their ideas; the emotion and energy created in a face to face meeting creates more urgency to share in some of the participants. Where the online discussion allows for more think time and the opportunity to participate actively even after the class, having dedicated class time to group work seems important to the strengthening of the group both online and in person. By addressing both forms of group work, a greater variety of student learning needs have been addressed.

<div align="right">

Computer Mediated Literacy Circles
In Class Group Discussions Supporting Online Discussion
http://multiliteracies.ca/index.php/folio/viewGallerySlideShow/264/534

</div>

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Lines 1 and 2 also make clear that in-class discussions are a continuation of the assigned on-line interaction, the textual Adjunct "In addition" also the textual Theme for the clause complex, and the elaborating clause (Line 2) further reinforcing the primacy of the on-line interaction. The purpose for the in-class meeting is the continuation of an activity originating in another temporal-space, and the explanatory paragraph builds up a description of how in-class meetings contribute to on-line literary circles. The grammatical realization of in-class meetings varies, group work/meetings realized as: an embedded prepositional phrase post-modifying "use" (Line 3); an non-finite process within an embedded clause (Line 5); the circumstance of the activity "created", a process realized in an embedded clause post-modifying "emotion and energy" (Line 6); and an embedded prepositional phrase post-modifying "class time," itself realized within an embedded clause performing as thematic Subject (Line 8). The grammatical variation enables Ms. Hughes to position in-class meetings within the thematic Subject of Lines 3, 5, 6, and 8, while simultaneously expanding the concept. The Given is the "more traditional," "face-to-face" group work, which students assert creates "emotion and energy." The New is what is delivered to on-line interaction, a complex constellation of "connection" (Line 3), "more urgency to share" (Line 6), and the "strengthening of the group both online and in person" (Lines 8). Consistently realized in non-human/non-sentient nominalizations, the New may be a possession extended to students (the implied or explicit Beneficiary) by material or circumstantial processes. Or it may be the transformation of "emotion and energy" into "urgency…in some of the participants" (Line 6), the creative process amplifying what may be construed as the more muted, pre-existing context of "some of the participants." Regardless, this is not the creation of relations between students. Rather, it is about giving students what they need to make meaning. Perhaps the best illustration of this is the Benefit in Line 3, the embedded clause which post-modifies "personal connection" conferring an enhanced "discussion environment," not developing trust between/among individuals ("They trust each other") nor a trusting group. In concluding the paragraph, Line 9 realizes Ms. Hughes' concern as the means by which students' learning needs are addressed. These needs realize group work as a matter of concern, not a prioritization of student/human relations.

Figure 45. In-class group discussions.

1   In addition to the regular and ongoing online, asynchronous discussions, students <u>meet</u> in their groups during class time

2   <u>to continue</u> their discussions face to face.

3   This more traditional use of group work <u>seems to provide</u> a more personal connection to fellow group members [[that <u>appears to enable</u> a more trusting and online discussion environment]].

4   Many students <u>have expressed</u>

5   that [{meeting face to face]] <u>helps</u> them <u>to think through</u> their ideas;

6   the emotion and energy [[<u>created</u> in a face to face meeting]] <u>creates</u> more urgency [[to share]] in some of the participants.

7   Where the online discussion <u>allows for</u> more think time and the opportunity [[<u>to participate</u> actively even after the class]],

8   [[<u>having</u> dedicated class time to group work]] <u>seems</u> important to the strengthening of the group both online and in person.

9   By <u>addressing</u> both forms of group work,

10   a greater variety of student learning needs <u>have been addressed</u>.

The paragraph communicates Ms. Hughes' continuing concern with meaning-making, her relation/obligation to her students to address their learning needs. Line 10 masks but does not erase her role as Agent and her perceived responsibility for enhancing the context's meaning-making potential. This included her decision to provide group work/meetings, the Medium which is developed in this gallery. However, only students express certainty that such in-class discussion "help," not Ms. Hughes, and that raises the final point that must be made, a point that parallels that made regarding the "Shakespeare" account. The modalized processes realize the possibility but not the certainty that face-to-face is enhancing on-line interactions. Perhaps this is only academic hedging, an avoidance of a direct claim that cannot be warranted. But Ms. Hughes assigns a low modality to the benefits offered, realizing a significant uncertainty. Ms. Hughes' responsiveness leads us to construe that the prioritized relation is that of student to teacher, the category voice of the teacher participating in a call and response with the voice of the student-in-the-classroom. But the value of the peer relations to meaning-making, the context of group interaction, is only a possibility asserted by the students, and relatively absent from the student voice as it is realized by Ms. Hughes.

Summary

The voice of student-in-the-classroom in Ms. Hughes' accounts is the voice of a student displaying an expanding capacity for meaning-making, the classroom realized as a context of resources – texts, media, modes, time – which students draw upon in meaning's practices and representation. The manipulation of materials and ideas is endemic to processes of meaning-making, and the privileged voice is able to share and warrant the reasoning behind each choice. If analysis is the central practice, creativity is the sign that meaning has been made personal, the weaving together of multiple strands requiring more of the student voice than replication of what the classroom affords. The central relation of the classroom is the relation of teacher to student, the teacher having an obligation to provide resources and to assure students' needs are addressed. However, resources create only the possibility, not the inevitability of an expanded capacity. Thus, the student voice carries a dimension of the unknowable, an indeterminacy as to which resource will address the voice's needs.

Spence

When the student text evidencing the recontextualization of quotidian knowledge is offered by the teacher and not the student, and when it is offered as an exemplar rather than as one text among many, then the text/message cannot be analysed for its approximation of voice. Such an exercise would contain an inherent failure of logic, the attempt to analyse the exemplar for evidence that it is an example of what it exemplifies. And so the student text from Ms. Hughes classroom will not be analysed for voice/message relations, for no high school accounts were wholly or partially authored by students, and no teacher-authored accounts contain a complete or near complete set of student texts resulting from a single assignment or task. However, the Shakespearean sonnet project authored by Spence Campbell is a rich example of the role of multimodality in the recontextualization of quotidian knowledge, and contributes greatly to the overall test of the propositions.

Spencer's text could not exist without the skilled application of quotidian knowledge, for his interpretation of a Shakespearean sonnet is a stop-action animated video using LEGO®, its modality a recognizable realization of his knowledge. The software and hardware used in the digital production were his, as was the "room full of LEGO®" which supplied material for the video's production. Spence, a Grade 8 student at Lord Byng High School, had received no public school training in the software or in production techniques he employed to create his text. The hard materials and soft skills that he drew upon to complete his academic task existed apart from the classroom. The success of his academic efforts is realized in the selection of his project as an exemplar of a multimodal interpretation of Shakespeare's Sonnet 18 "Shall I compare thee to a summer's day."

The contribution of multimodality

The contribution of multimodality to Spence's text is almost the polar opposite of its contribution to Helen's work. Whereas Helen's intermodal designs realized abstract concepts related to thinking and learning, Spence's text attempts to render the poetic tangible, the metaphors, the ambiguities of setting, and the figurative meanings of less-than-contemporary language made visible in a LEGO®-animated world, and in his oral performance of the sonnet, the key element of the video's soundtrack. Ms. Hughes suggests that "Through design and re-design this student has had to make meaning and bring it into an new artistic form. This shows that the student has comprehension of the sonnet beyond the literal level. With his LEGO® stage, actors and props, the student is able to place the story into a context and reveal key elements through symbols such as the Grim Reaper who is Death."
(http://multiliteracies.ca/index.php/folio/viewDocument/222/9431) It takes but several examples to show how this is the case.

The video alternates between two primary settings, the performance of the sonnet on an open stage (see Figure 46), and the poem as an exchange between two lovers. At the point that Shakespeare formally enters his public school life, Spence has demonstrated the theorized historical relation of Shakespearean sonnets to the poet's personal life, but also the sonnets' place in the playwright's public theatre, for the same

male LEGO® figure performs on stage and in the garden. The contribution of the visual, gestural, and spatial is thus immediately evident, a single reading of the sonnet unable to simultaneously communicate the historical duality. The figure holds a third layer of meaning, though this is more difficult to construe without the accompanying production

Figure 46. LEGO® video 1.

notes. These notes briefly describe Spence's decision not to "personally act out" the sonnet, and instead to direct LEGO® people, as he "found them far more cooperative than regular actors." Spence is the central character of the video, the voiceover his performance of the sonnet. Shakespeare the man, Shakespeare the actor and Spence the actor are folded together in a single LEGO® figure, the materiality of the actor realizing a layering of understandings with an efficiency unavailable linguistically.

Similarly, the video affords Spence the ability to create multiple vantage points for the viewer, the angle of the gaze alternating between demand and offer in a near-perfect correlation with the setting. Spence attends first to Shakespeare's public life, the opening scene capturing a theatre's pre-performance bustle, crowd noise greeting the actor entering stage right. The opening shot zooms in on the audience and stage, resting at the point that the viewer's gaze becomes one with the audience, the actor's eyeline vector directed at the viewer.[82] The viewer is one with the audience, a participant in a first order of experience, the actor offering a performance to the audience's dis/passionate gaze. The experience offered to the viewer is the experience of a person in that time, attending a performance, seeing Shakespeare on the stage. This shot, the actor variously

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[82] The video was designed as an in-class presentation, not as a web-embedded video nor as a component of a digital document, and is analysed as such. Analysing the text for its original context negates the need to consider complicating factors such as the size and angle of a digital viewer's computer screen.

realized on the stage, dominates the video, framing its beginning and end, as well as appearing at four points throughout.

Angle and distance change at the line "Thou art more…" Now the viewer observes the lovers in garden, both seemingly unaware of the viewer's presence, the

Figure 47. LEGO® video 2

oblique angle detaching the viewer from the space of their exchange (see Figure 47). The shot is made from a high angle, the viewer outside of time in their objective vantage on the couple. The information afforded the viewer is quite different from the opening shot, still an offer but from outside the action. With but one exception, Spence maintains this combination of angles and distance whenever he turns the camera on the lovers, a consistent realization of the viewer's relation to Shakespeare, the man.

A third angle afforded the viewer is the actor's vantage, the audience's gaze upon the actor/viewer realizing the demand of the social context, the demand to be entertained (see Figure 48). Mimicking the Shakespearean actor's view of the pit, the viewer gazes down to the audience, although the stage is not in the round. Appearing after approximately 26 seconds, this shot is realized only once in the video.

The central figure is simultaneously three men; a single reading affords three vantages on the sonnet. The viewer is taken from the theatre floor, to the sonnet's imagined first moments, and to the stage, distinct perspectives of what the sonnet is and was within the literary world. Each could be realized in language, in the traditional form of an English class essay, but the multimodal assignment achieves a density of meanings that would be difficult to replicate in a single mode, angle and gaze adding to the interactive meanings realized in the text. On Spence's LEGO® set, the viewer is enabled to see and see through the eyes of the poet as well as through his words.

Perhaps the descriptive/definitional power of the visual is Spence's most familiar use of image, images enhancing language made less accessible by time. The first instance of the co-deployment of language and visual for this purpose – that is, what is seen and what is said are semantic near-approximates - is realized with the line "Rough winds do

Figure 48. LEGO® video 3.

shake the darling buds of May," a series of time-stopped images depicting LEGO® flowers rising and falling, the viewer to construe the strength of the wind passing through the garden. Later, greenery is realized without flowers, accompanying the stanza "But thy eternal summer shall not fade." The image realizes time's passage through the absence of May's flowers but it is also a literal interpretation of a metaphor for beauty, unlike the definition provided earlier. Not all metaphors realized visually are also made literal. To realize his understanding of the two stanzas which begin with "Nor shall Death…" Spence draws upon an iconic western image of death, the Grim Reaper, who circles toward and then is repelled by the lover/actor. However, the literal is also at play here, the gestural and spatial taking on additional importance as the potential for death's shadow falling on his lover's beauty is literally warded off. Within the three examples, the more familiar use of the visual is realized for three distinct purposes: a literal definition; a visual realization of a linguistic metaphor; an iconic elaboration of a metaphor, the visual's literal elements also contributing to the intermodal enhancement of meaning. Spence's capacity as a meaning-maker, the capacity to draw upon quotidian knowledge to further his academic success, is realized as multi-faceted within this narrow band of the visual mode's potential.

A tonal analysis would reveal further dimensions of the video's intermodal play, pitch, elongations, and volume contributing the salience given to one or another elements of the visual and linguistic text. But the visual is sufficient for demonstrating how

Spence's quotidian knowledge has been employed in completing an analysis of a Shakespearean sonnet. Lest the design and/or the work appear simple, here is Spence's comment on the effort required after the sets had been built and the footage shot, that it took "…an excrutiating three hours adding voices, clipping footage, adding special sound

Figure 49. LEGO® video 4.

effects and including titles to put together my 90 second film." What is efficiently and effectively communicated to the viewer is the result of a series of design choices, choices regarding the construction of the sets, characters, and props, choices of camera angles and distance, choices regarding sound effects and reading intonation, and choices as to how the modalities should be combined. In making the intangible tangible, in realizing the back story as a narrative reality, quotidian knowledge is institutionally purposed. It is the capacity to draw upon multimodal resources that is the quotidian knowledge in this context. Provided the opening to draw upon such resources, Spence demonstrates their institutional value.

The Test of the Propositions

Analysis of the three student texts was purposed for testing two of the propositions used to assess the relevance of Bernstein's sociology of pedagogy, and more specifically the recontextualizing rule, to theorizing knowledge mobilization in education:

1. Recontextualization is, in part, dependent upon the range of semiotic resources afforded a category.
2. Student recontextualization of quotidian knowledge for academic purposes requires approximation of the voice of the pedagogic text.

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At the most basic level of understanding, these propositions have been proven true. Each multimodal realization of knowledge is dependent on a range of afforded semiotic resources: Thofiq to realize the academic register of a text to which his geographic and societal knowledge contributes; Helen to realize a context in which she can warrant the contribution of her home language to learning and knowing; Spence to realize his multimodal meaning-making capacities. Each approximates key dimensions of the voice of student-in-the-classroom, though voice differs in each circumstance. None of the texts is without limitations or flaws; however, the general claim regarding the recontextualization of quotidian knowledge stands.

Yet the exploration should not and will not stop at this point. The validity of the propositions suggests similarities in the principles governing successful recontextualization; the distinctive dimensions of voice and variations in the afforded semiotic resources' contribution to recontextualization offer possibilities for more nuanced understandings, understandings of particular interest in that this inquiry explores quotidian knowledge in relation to knowledge mobilization rather than as a separate and distinct set of practices. The assumptions underpinning this inquiry - the larger social and economic assumptions regarding the increased agency afforded those who are capable of moving knowledge across contexts, and the relationship between diversity, creativity, and innovation – assign students' quotidian knowledge a social value more extensive than its value to the individual or community/ies constituting the primary site of recontextualization. These assigned values provide a context for further reflection.

Agency

The basis on which texts were selected for analysis, the students' successful recontextualization of quotidian knowledge, realizes each student's agency a priora, the inquiry's purpose to establish not agency but the relevance of voice. Having established voice's relevance, there is a further question regarding the dimensions of voice which may have facilitated or inhibited recontextualization. These warrant consideration, though neither time nor space allow for detailed examination, remembering that in this inquiry agency "… refers not to the intentions people have in doing things, but their capability of doing these things in the first place." (Giddens, 1984, p. 9)

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Prior to the empirical study "Alternative Accountability," the three subject-teachers had limited opportunity for interaction or for developing a shared discourse for describing their pedagogies. None taught at the same school, and their educational trajectories are distinct. Ms. Hughes and MJ were INE participants, but would have attended perhaps one common organizational meeting. Jeannie and MJ had met in a graduate seminar at UBC less than a year before committing to participate in the study. Yet there is a striking similarity in the extent to which the practices of the student voice encourage students to go beyond the resources of the immediate lesson to create a context for thought. In Jeannie's classroom, this is first encountered in her desires for her students' relation to knowledge, the metaphoric spatiality of her desires unachievable if a student's perspective is limited to the provided meanings of a lesson. The extent to which students are expected to articulate their thought processes is dependent on the nature of the activity; however, the continual remaking of field trip and personal experiences in text, the reconstrual of experience from beyond school's walls, is central to the student voice. MJ prioritizes the involvement of the student voice in the construction of the classroom's communicative foundation, the base from which the specialized discourse and curriculum is built, and the student voice explicitly encompasses literacies practices from beyond the classroom walls. The practices described by MJ, Holly and Helen realize contextual resources as circumstances of thought (thinking and thinking about thinking) as students engage in support of their own and others' learning. Meaning-making is central to the student voice in Ms. Hughes' classroom as well, the assignments a series of contexts in which students analyse and create. The snippets of classroom discourse realize the rejection of *an* answer, and instead privilege texts which evidence students' analytical practices and personal meanings. In all three contexts, the privileged student voice reaches out to available meanings, their own and those provided by institutional contexts, to provide a context for thought.

These practices of going beyond may or may not explicitly reference the meanings constituting students' quotidian knowledge, the accounts of the three subject-teachers markedly different in their descriptions of such practices. Nonetheless, each teacher is unambiguous in positioning teachers' knowledge/curriculum as a subset of the knowledge which may be recontextualized in pedagogic discourse. In effect, though the

data used in the propositional tests has a limited capacity for addressing the means and/or the manner, the three subject-teachers engage students in developing the context for academic tasks, students sharing in the responsibility for identifying relevant meanings.[83] Context is not dictated but negotiated.

The negotiation of context does not obviate the need for student messages to approximate voice, the theorized dependence of successful recontextualization (and thus knowledge mobilization) on approximation of the student voice holding regardless of voice's dimensions. But the three classrooms' common emphasis on reaching beyond raises questions about the extent of student capabilities required to successfully act as agent, remembering agency is capability and not desire. To know you know, to know what you know is relevant, and to know how to use what you know so that others see its relevance are three distinct acts. [84] The requirement, for it is a requirement in these classrooms, to go beyond necessitates students' practice of all three, and practice at increasing degrees of abstraction. Where no such requirement exists – where negotiation of context is not a dimension of the student voice - and no support exists for engaging in such practices, the capabilities required for recontextualization/knowledge mobilization must be developed outside the classroom. In effect, the practices of knowledge mobilization are rendered a quotidian rather than an institutional practice, the capabilities highly valued in the broader realms of society left to happenstance. Agency is curtailed because the capabilities necessary for agentive acts remain potentially un/underdeveloped. The emphasis on reaching beyond the lesson is not a condition for successful recontextualization, unlike the approximation of voice; however, practices of the student voice requiring negotiation of context may be seen as facilitating students' present and future agency.

Equally clear is the teachers' control – and the students' sensitivity to their control – of register. Though context is open to all relevant meanings, relevance must be

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[83] In remaining consistent with Bernstein (1990, 1996) and with the understandings of power which are integral to social semiotics and SFL (Halliday & Hasan, 1985; Halliday & Matthiessen, 1999; Hodge & Kress, 1988; Kress, 1993), this description of the negotiation of context in no way suggests that power is equally distributed between teachers and students. Indeed, the teachers' control of the student voice, and their ability to require consideration of knowledge beyond the classroom, is evidence of the power they hold.

[84] I have earlier noted that this point is one to which MJ Moran continually returns when discussing her pedagogy.

demonstrated and relevance is demonstrated by realizing a register appropriate to the context. The dynamic between negotiating context and realizing register distinguishes these practices from the familiar metaphoric "connection" dominating many practical texts on education. Consider, for example, Spence's LEGO® stop-animation. The reader will recognize that neither LEGO® nor stop-animation are included in the Grade 8 English provincial curriculum. Neither were they realized in the Field nor Mode of classroom texts or discourse, not in Shakespeare nor the activities and conversations for which "Romeo and Juliet" provided the circumstances. Yet Spence's text was selected as an exemplar of close reading and as a demonstration of personal knowledge, the video's intermodal relations effectively an analysis supported by citations, the reading of the sonnet. Spence has reached out to identify resources relevant to the context, then drawn these resources *into* his text, a far more complex semiotic act than realizing a connection. Thofiq is almost rigid in realizing the register of his research project in a classroom register modelled earlier in the year, control over the register of the text's lower left phase escaping him, but his quotidian knowledge nonetheless successfully realized within his text. Similarly, though it is far more complex, Helen's digital text is realized in a register common to texts authored by MJ and her peers. Recontextualization requires approximation of the student voice; however, students' texts suggest that issues of register are also relevant to agency.

Again, the data set and the inquiry's objectives limit this discussion, the absence of information regarding the immediate context of the texts' realization particularly problematic. However, as teachers' control of register appears to enhance students' ability to successfully recontextualize quotidian knowledge/engage in knowledge mobilization, we might consider why this is the case. As emphasized, the practices of knowledge mobilization go beyond connection to the instantiation of flows across contexts, meanings remade in support of others' learning. It is the other whose learning needs are central to remeaning and whose needs create relevance for one's quotidian knowledge; the focus is on their understanding. But to take what one knows – or even to know that one knows something of relevance to another – and to position such knowledge for others' uptake is a semiotically complex act. It is this very issue that

routinely confounds the knowledge management efforts of governments and public and private institutions.

Perhaps register's major contribution to recontextualization is that it is the basis through which students learn to distinguish between the purposes for which meanings are brought into contact, and through which students learn to identify the principles which govern pedagogic texts' discursive construction. It is in remaking one's knowledge in a new register that one's attention is drawn to the points of difference, opening the possibility for comprehending the reasons for such difference. It is in understanding the reasons that one begins to catch sight of the ordering/disordering relations of a discourse, "how the distribution of power and principles of control establish a regulating discourse" (Bernstein, 1990, p. 167). It is in grasping the principles governing the immediate context's pedagogic text, one is afforded insight into the "principles of the principles of the recontextualizing" (Bernstein, 1990, p. 34), abstractions which regulate more material contexts, and one begins to develop capabilities for realizing similar insights in future contexts.

Perhaps it is the rigor but also the support proffered by a common register that renders possible such understandings. The single register performs as a non-negotiable among many negotiables, a given amongst the many decisions and judgements required in realizing quotidian knowledge for new contexts. Clarity regarding the text's register effectively reduces the complexity of the task (though does not make it simple), narrowing the afforded experiential, interpersonal and textual meanings from which the student may select. Perhaps the further contribution of control over register is that it sensitizes students to the range of meanings to which they must attend, and to the fact that (quotidian) knowledge's relevance may be discounted because of the pedagogic text's design. The larger insights into the principles of pedagogic texts' discursive construction do little for the student's agentive capabilities unless they can be practically applied.

Whether register could perform as effectively without a corresponding emphasis on reaching beyond/negotiating context is a further question that cannot be resolved. However, we may reasonably conjecture that in relation to knowledge mobilization, the critical dimension of voice is the dynamic between the two: 1) that reaching beyond

immediately available meanings fosters awareness of the meaning relations constituting pedagogic texts; and 2) that control over register supports a) students' developing comprehension of the complex relations between context and text, and b) their attendance to the dimensions of voice on which successful recontextualization depends. If so, then such awareness, coupled with practice, provides the basis for students' expanding capabilities as agents, and their capacity to mobilize knowledge in furtherance of personal, professional, and social objectives.

The similarities and differences in the three pedagogic classrooms raise challenging questions regarding the strength of their classification and framing, and of our understanding of the recognition and realization rules through which they are constituted. One might construe these classrooms as strongly framed and more weakly classified, but perhaps this is only the case if one presumes that privileging beyond-the-classroom resources requires weak classification. An alternative construal would suggest the classroom's external classification values are weak – that is, the institutional context does not distinguish strongly *between* classrooms – but that learners within these classrooms distinguish strongly between their learning environments and others - that is, the internal classification values are strong. If so, then the context's institutional status is less important to the distinction between, the critical distinction of classification, than the participants' orientation to meaning, the context defined by the knowledge and meanings available to students and teacher, and by the responsibility each learner holds for instantiating pedagogic texts. To draw upon Bernstein and Hasan, perhaps these classrooms are strongly classified internally by their coding orientation, insulated from quotidian and/or (possibly) institutional contexts by the nature of their consciousness. And perhaps the participants in these classrooms are conscious of/recognize these differences, recognize their place as recontextualizers and their responsibilities for realizing pedagogic texts. If so, such learning environments offer still greater potential for what they may teach about the development of students' agency. Bernstein's theories are capable of supporting just such inquiries, their theoretical strength being their power for explaining how consciousness enters into social processes. The capacity of Bernstein's sociology of pedagogy to support inquiries into knowledge mobilization provides a basis for undertaking inquiries into such questions, its theoretical robustness demonstrated in

relation to the key dimensions of knowledge mobilization practices and in the propositional tests completed thus far.

Creativity and Innovation

Creativity and innovation are broadly construed in the literature on diversity and knowledge mobilization, assessed against narrow (ex. patents) and more broad-based indicators of economic and social development. The theorizing of knowledge mobilization undertaken in this inquiry, the testing of Bernstein's sociology of pedagogy for its explanatory potential regarding such practices, has little to say regarding knowledge mobilization's impacts, beyond offering the potential for foreseeable and unforeseeable change resulting from genuine choice. The student texts, however, offer cautions regarding assumptions of creativity, particularly as they relate to education, multimodality and to the realization of quotidian knowledge.

1. The non-linguistic elements of a multimodal text may sign neither innovation nor creativity. Thofiq's text realizes the academic genre of a descriptive report, the spatial and visual elements a conservative realization of the traditional functions of Mode. Spence's LEGO® stop-animation is a creative use of material; however, the realized meanings present a standard, age-appropriate analysis of a Shakespearean sonnet. This in no way diminishes the quality of the texts, or the contribution of multimodality to the recontextualization of quotidian knowledge. It is simply a note that multimodality by itself is an inappropriate indicator of innovation.

   Although not directly related to creativity, it should also be noted that the production values of a multimodal text do not necessarily correlate with its semantic complexity. Of the three student texts, Spence's is arguably the most technologically sophisticated and of the highest order of production values. Yet, though less technologically demanding to produce and perhaps less polished, the intermodal realizations of meaning that are Thofiq's and Helen's texts are equally if not more semantically complex. Again, if the contribution of diversity to

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creativity is conceptualized as ideational innovation, production values alone are an insufficient indicator of innovation.

2. The complexity of hypermodal texts raises questions as to the meanings viewers construe. The multiple afforded viewing paths, the realization of traversals through the text, are merely one dimension which must be addressed. Setting these aside, one may also ask how a casual viewer would construe meaning from each of Helen's three phases i.e. whether the classifications of practice realized in the text are easily accessed. It is worthwhile remembering Kress and van Leeuwen's (1996/2006, 2001) caution that grammars for non-linguistic modes may not have and may never achieve the regularity of linguistic grammars, and that developed/developing grammars may not be accessible to those without related expertise. This issue becomes more pronounced in examining the subject-teachers' texts, and so here it is merely flagged. However, the questions are equally relevant to the students' texts, particularly Helen's.

Both points go to the heart of debates around diversity and creativity, not only the diversity of students' quotidian knowledge, but broader notions of diversity and difference. The earlier discussion on multimodality noted that texts' increasing multimodality (and digital texts' potential hypermodality) affords but also complicates the productive and receptive tasks of meaning-making. Knowledge mobilization requires difference to be made comprehensible, the three contexts/texts analysed thus far demonstrating the dependence of successful recontextualization on approximation of voice and the range of afforded semiotic resources. The challenges of multi- and hypermodality are resolved in the students' texts by the approximation of voice. The subject-teacher accounts offer an additional context in which to explore the issues multimodality poses.

RECONTEXTUALIZATION OF PEDAGOGIC PRACTICE AND TEACHERS' ACCOUNTS

In relation to the on-line accounts, the success of teachers' recontextualization of literacies practices is theorized as dependent on: a) access to a range of semiotic resources and b) a register in which teachers' position in the performance of public accountability is recognized (Propositions 1 and 3).[85] There are, in effect, two texts implicated in these propositions, the texts which are the on-line accounts, and the texts which are the public dialogue on education. In keeping with Bernstein, the on-line accounts can be understood as pedagogic texts, public acts of knowledge mobilization that remake classroom practice into a (potential) participant in the larger text of public dialogue. In this, the accounts simultaneously represent and construct their two contexts, for the potential to alter the participant relations of public discourse flows from knowledge recontextualized for the public, specifically the recontextualization of knowledge-in-the-classroom/the remaking of classroom pedagogic texts within the accounts. Similarly, teachers' positioning within the register of the account is implicated in their positioning within the register of public discourse. At least in this inquiry, the accounts are the means by which teachers enter into public debate, their realization as participants in recontextualized pedagogic practices one of the means through which this may occur. Equally important to issues of positioning, though perhaps less transparent, are the accounts' interpersonal dimensions, these an outcome of decisions made by teachers in the context of production. Decisions regarding who may author and under what conditions, as well as decisions regarding how relations with the viewer will be instantiated, are options selected from the meaning potential of the originating context.

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[85] It may be helpful for the reader to recall the three propositions being used to assess the relevance of Bernstein's theories to knowledge mobilization:

1. Recontextualization is, in part, dependent upon the range of semiotic resources afforded a category.
2. Student recontextualization of quotidian knowledge for academic purposes requires approximation of the voice of the pedagogic text.
3. The viability of teachers' accounts of literacies practices is dependent, in part, on the development of a semiotic register in which teachers occupy a recognized position from which to recontextualize pedagogic practices and texts (including the student recontextualization processes these particularities evidence) for the purpose of public accountability.

These decisions result in a text – or, as shall be seen, a text-as-probabilities – which construes the teachers' position in relation to the viewer and within discourses of public accountability, these functions performed in addition to the accounts' ideational functions. Though not a determinant of teachers' position within the register(s) of public discourse, the accounts are resource for their reframing, a recontextualization generating a gap or potential upon which the teachers may draw.

Thus, at its most basic, the issue is whether teachers are recognized as knowers within the domain of public discourse on education, just as the student voice was accorded status as knower in the three classrooms examined earlier. Yet the challenge faced by the teachers in realizing such relations is more complex than the challenges faced by the students, at least in relation to the contexts researched in this inquiry. In all three classrooms, the student voice is understood as moving across multiple contexts, each context a set of meanings affording unique opportunities for recontextualizing quotidian knowledge. In contrast, the teachers are understood as producing texts within a single context, this context being the exploratory study simulating contexts of public accountability. The accounts' viability is dependent on recontextualizing knowledge for this singular purpose, from a single set of meanings, and not any other purpose for which teachers' might mobilize what they know. [86] A single context thus poses a limitation on how the accounts' success might be understood, and what teachers must accomplish to be positioned as knowers.

A single context of situation suggests register rather than voice is the appropriate object of study in analysing the digital accounts, though a context does not confine teachers to a single register. Still, a text which falls outside the context's parameters may lead to the text's rejection or misconstrual, or may contribute to the reconstrual of the context itself. Such possibilities emerge in the data that follows, register providing a basis for understanding how meaning is being made.

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[86] While acknowledging that teachers may recontextualize their literacies practices in a variety of contexts and for a variety of purposes, it is public accountability that is of interest in this inquiry – not parent-teacher meetings, not professional development, not academic contexts, not activities within their professional associations. All are contexts in which teachers might recontextualize knowledge for pedagogic purposes, but all lie outside the scope of what will be examined here.

Context, however, is not the only difference in the data sets. Along with differences in the range of contexts being examined, there are also differences in how we might understand the boundary strength of these contexts. Whereas some ambiguity exists as to the boundary strength of the contexts for the students' messages, the boundary strength of the context for the teachers' public accounts is unambiguously weak. For example, though the study participants were provided with information regarding the nature of the research, their construal of "public" was not necessarily (and not likely) identical. Similarly, each person's beliefs and values regarding the public's place in discussions about education was a potential influence on their evaluation of the accounts. Differences of this type render the classification's *between* relations correspondingly less distinct. As the constitution of an account – the categorization of the subject matter, the range of modalities incorporated into an account's design, the degree of detail provided, the relation between author and viewer, etc. – was a design decision reached independently by each teacher, the internal framing of the teacher voice was equally weak. None of this detracts from the hypothesized dependence of recontextualization on register. However, it does provide insights into the challenges register presents in such contexts.

Relative to this inquiry, the differences between contexts for the students' and teachers' texts strengthens the quality of the tests applied to the theorizing of knowledge mobilization, for they increase the range of variation for which the theorizing must be able to account. As well, keeping in mind the basis on which funding was provided for the research, the teachers' texts offer greater potential for understanding knowledge mobilization as a societal practice within and beyond education. The context for the teachers' texts, the classification and framing values, mirror those of many e-government initiatives in open societies, replicating the challenges of knowledge mobilization in social (in contrast to the organizational) contexts. Thus, difference in the data sets is a strength of this inquiry, just as difference is theorized as a strength in knowledge societies.

The analysis of the teachers' texts follows a path somewhat unlike the previous chapter, reflecting the dissimilarities in the data set used to test Propositions 1 and 3. The chapter opens with a discussion of the success of the on-line accounts, and how success

may be understood from the group interview discussions. From there, the analysis moves to the subject-teachers' use of the multimodal affordances of the system, with particular attention to how student texts/quotidian knowledge are recontextualized within the accounts. Issues of projection are central to this discussion, linking the analysis to register and the register(s) of the subject-teachers' accounts. The construal of audience and the order of experience realized in comments by group interview participants provide the final information required for assessing the propositions.

Stakeholder Assessment of the Accounts

Initial Assessment

Whereas the success of the student texts was determined by the respective teacher, the accounts' success was determined by group interview participants, and participants in all six interviews assessed such communication as valuable. In interviews ranging from roughly one to two hours, they described what they had observed, listened to and read; what had drawn their attention or sent them away; what they had gained and what they imagined could be gained from this or similar forms of information sharing. Knowledge flows had been generated between the classroom and the public, and from a theoretical perspective we may understand teachers as having successfully recontextualized their pedagogic practice.

Simple counts, however, frequently misrepresent data, and a simple count of support for such efforts is equally insufficient here. To begin, what became readily apparent in all interviews was that participants focused on accounts of schools and teachers with whom they were familiar. In other words, parents of students from Lord Byng spent most/all of their time on accounts authored by Lord Byng teachers; representatives from community organizations attended disproportionately to the accounts from schools with which they were associated; administrators focused on schools and teachers they knew and/or with whom they had worked. The accounts' success holds across interviewees, but the difference in accounts being assessed must be noted.

Secondly, not all accounts were equally successful, a not unexpected outcome in exploratory research involving a diverse range of participants. The full extent of the

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assessments and feedback provided by interviewees, representatives of a range of educational stakeholders, would be addressed in an operational study. Here, however, the focus is narrowed to issues directly related to Propositions 1 and 3, to issues of multimodality and register, and to perceptions and feedback associated with the same.

Writing

The most notable consensus was the rejection of the INE case studies and the form of writing they represented.[87] The negative evaluation was most frequently offered unprompted; occasionally, the evaluation was a response to questions regarding accounts that were disliked or found unhelpful. Repeatedly, the cases were used to create a contrast. Such was the case in the following excerpt, which occurred early in a discussion among community organization representatives. Two individuals had been sharing their initial impressions of the accounts, their comments unilaterally positive until the first speaker shifted to the case studies:

Speaker 1:	*I mean there was that was that whole text-based piece where a bunch of people processed the information in a much more conventional way, where I did not bother…*
Interviewer:	*Ah…*
Speaker 1:	*…to read it, because I was not engaged.*

<div align="right">Community Representatives' Group 1 Interview</div>

In a similar fashion, in an extended exchange in which parents overlapped and punctuated speech turns with affirmative minor clauses, a specific case study was referenced as a contrast:

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[87] The accounts resulting from the INE were not intentionally included in the second round of research; however, participants in all interview groups ignored the oral and written directions to focus on accounts listed under the heading "Alternative Accountability," instead enacting their preference for familiar schools and teachers. From the perspective of the empirical research, the participants' behaviour yielded several insights that would have been difficult to otherwise obtain.

Parent 1:	*And then some things I feel like I stumbled upon. One is, for example, there is a text, a long text by Amy Hughes and I didn't read it. It felt like a lot of information and I started to read it and there was some charts and a control group and I just thought I didn't read it...*

<div align="right">Byng Parents' Group Interview</div>

Lest assumptions be made regarding the speakers' ability to process complex texts, it should be noted that one of these speakers holds a graduate degree, and the other multiple university degrees and a professional designation. Had they chosen to read, it is unlikely the case studies would have posed comprehension problems. The simple fact is they were not read.

The conversation around case studies arose among administrators as it did among other stakeholders, in the context of evaluating more and less successful accounts. However, unlike within other groups, one participant had read case studies, and commented:

Administrator 1:	*I mean, I think of the Kitchener one, for example, it's it is it was I was trying to think "Who are we writing for? This must be for other teachers. If, so going back at the very front, it does say it's for parents and for, you know, everyone to sort of learn more so I, that one, I I was very confused in terms of....*
Administrator 2:	*Yeah.*
Interviewer:	*Mm-hmmm.*
Administrator 1:	*...to how it could be used in the classroom. And it was a good professional development piece but I don't know one that would be that interesting to parents.*

<div align="right">Administrator's Group Interview</div>

This evaluation, coupled with the material responses of parents and community members (the click away from the page), speaks directly to issues of register as they interest us in this inquiry. It was not the case study content that viewers found problematic but their textual configurations. "Text-based piece" and "long text" were negatively charged participants, and the sense from these comments - that case studies were "stumbled upon," not a destination that would be sought out, neither engaging nor read - speaks to the perception of such texts as contextually inappropriate. Although not consciously employed as a concept, we see issues of register used to distinguish between more and less successful accounts.

Unsurprisingly, given that writing was a primary basis for distinguishing between accounts, comments on the topic extended beyond case studies. Though occasionally offered as rules or absolutes, the feedback was more frequently positioned as a personal opinion, the comments of this Begbie parent more detailed but not atypical:

Parent 1:	*I think, I think they should keep it, um, short form as well because we don't have, I don't know, I don't have time to sit there and read pages. Like if it's a big huge page and you're trying to read it, uh, for me, I'd prefer to have it short, and short bullet forms. It makes things easier for me. I mean I don't mind if it tells a story but, you know what, I'd prefer to just read, especially if you want to look through the whole website…*
Interviewer:	*Uh-huh.*
Parent 1:	*…it's easier for me to get just little bullet, as I say, forms of, a little bit of everything.*

Begbie Parents' Group Interview

"Short" is the obvious contrast to long, though the idea that digital writing should be short *and* preferably bulleted oversimplifies matters. Further, the interviews offer ample evidence of contradictory opinions, sometimes held by the same person. But "short" or its synonyms consistently held a positive valence in reference to writing,

whether or not these public stakeholder representatives refer to case studies. And length speaks to the stakeholders' expectations regarding register, not only how they expect to receive information (foreshadowing the extent to which stakeholders looked to other modalities for meaning), but by whom. Stakeholders did not preclude writing nor the particular meanings it might afford; however, the emphasis on length speaks to the viewers' construal of the context and how they anticipated engaging with the accounts.

An exchange among community group representatives helps us to understand how/when writing contributed to success. Among the six groups of individuals interviewed, none were better prepared for their second interview than the two groups of community representatives. Though not requested to do so, all but one kept notes while viewing the site, bringing these notes to the second interview. The exchange below, which occurred approximately two thirds through the interview, is part of a longer stretch of text that followed the question "Do you have an account that stands out in your mind most?" and speaks to stakeholders' perceptions of the function(s) performed by successful account writing. Immediately preceding the excerpt, Speaker 1 described what they gained from the account "Heart and Mind." The description referenced only students' work, which led to the following recast and probe:

Interviewer:	Cause that's one of the things the teachers talk about, the kids' work being evidence of practice and one of the questions is "Well, is it?" The teachers think it is. Do you guys think, could you read…in a, in a sense it's can you read the kids' work and you obviously just did. You went from the mediation to the writing…
Speaker 1:	Yeah.
Interviewer:	…to the poetry and you've talked about how personally this would allow them to engage with the text. Um, are you able to do this because you work with kids or do you think the general public would be able to interpret the kids' work in the same way?

Speaker 1:   *I think they would if they value that kind of writing or that part of learning, and I think maybe you would get stuck in, say, within the inner city school, in Seymour, with a lot of the ethnic population that doesn't put value to that, so they would just look at it as, well, it's not aca…, it's not math, it's not going to help you become a CGA or anything, right?*

Interviewer: *Mm-hmm.*

Speaker 1:   *So it really depends, it would, you could see it if that's something you do value.*

Speaker 2:   *And I think it would take some explanation…*

Speaker 1:   *Yeah.*

Speaker 2:   *I think, for me, the comments from the teachers, along with the material from the kids, really explained everything to me, and really also explained to me what I was doing in school for so long. I remember when I graduated thinking like…*

Speaker 1:   *Yeah.*

Speaker 2:   *"What did I actually know? Like I don't know anything." And, um, looking back at the projects and hearing, see the teachers' comments about it, or like the field trips and how…or when they're learning about one thing, they do music on it, art and written stuff, and how it all sort of comes together.*

Interviewer: *Mm-hmm.*

Speaker 2:   *I mean, I don't think the kids notice and I certainly didn't notice when I was little. But having that explanation really sort of wrapped it all up, and you*

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	would go "Okay, yeah. I see what, what, I see the value in…
Speaker 1:	*Mm-hmm.*
Speaker 2:	*…all these different ways of teaching and ways of learning and how they all come together."*

<div align="right">Community 2 Group Interview</div>

Of particular interest to us are Speaker 2's comments, which extend Speaker 1's remarks regarding the values viewers bring to the accounts. The extension, realized by the conjunctive adjunct "And" and the continued use of "it" (a reference to the public's ability "to interpret the kids' work"), adds a second condition to a viewer's ability to interpret or understand the accounts, and the condition is "some explanation."

The contribution of Jeannie's writing (and perhaps Amy's, given the reference to music) is that it explains. The teachers' comments indicate "everything" – "what I was doing in school;" "how it all sort of comes together;" "wrapped it all up." The writing valued by this speaker enhances perception ("…you would go 'Okay, yeah, I see…' "), providing the connective tissue for other information offered in an account. Without the teachers' comments, the assemblage might not be understood. Without the students' work, without the writing being "along with the material from the kids," there would be nothing to connect or assemble.

Multimodality and Intermodal Relations

In understanding the stakeholders' assessment of the accounts, one cannot lose sight of the primacy stakeholders attached to the students' work. Discussions of writing did occupy a significant percentage of the interviews, and provided some of the clearest points of consensus. But the clearest consensus was that the students' work and images brought stakeholders to the site and kept them there. In this exchange, parents had been describing the usefulness of the student images, work and audio, in response to which they were also asked whether that was "…sufficient or did it need the teacher commentating?" Notice again how references to length of the teachers' comments -

"little," "not too long," "just a couple of sentences," "introduction," and "quick synopsis"
- are used throughout the exchange. Notice too what matters most.

Parent 1:	*I still like the teacher to at least give just a little, just a little, not, not too long…*
Interviewer:	*Mm-hmm.*
Parent 1:	*…just like a couple of sentences or even like, like I said, a couple of points and like, that's it…*
Interviewer:	*Mm-hmm.*
Parent 1:	*…and let the, let the, let their work speak…*
Interviewer:	*Mm-hmm.*
Parent 1:	*…for themselves, just a couple, so at least we know what's, what we're going to see…*
Interviewer:	*Mm-hmm.*
Parent 1:	*…and, the next few pages, so at least, at least we get a rough idea.*
Parent 2:	*Yeah, just as introduction…*
Parent 1:	*Mm-hmm.*
Parent 2:	*…and to provide context.*
Parent 1:	*Yeah.*
Interviewer:	*Mm-hmm.*
Parent 2:	*So we know, okay we read this novel, we, it took us six weeks to read this…*
Parent 1:	*Yeah.*
Parent 2:	*…or two weeks to read this. It was an involved story, um…*
Interviewer:	*Mm-hmm.*
Parent 2:	*…maybe a quick synopsis of the story or something, and then the students were asked, you know, about, you know this particular aspect of it. And so, okay, now I know the context and when I read this*

material, but I I agree. I think, in most cases, the
kids' work is, is certainly what's the most
interesting and how they're speaking about it, but
just that little introduction of providing context, um,
helps to uh do that. And know in some cases, they
did that. I think some cases, it, I was always
skipping that to get to the kids' stuff...

<div align="right">Begbie Parents' Group Interview</div>

"(T)heir work" is the students' work, not the teachers. Parent 1 presents the sequence in which they would like to view information, their desire being for the teacher to provide "…just a couple (of points), so at least we know what's, what we're going to see…" Parent 2 also indicates a preference for the teacher's comments to precede the students' work "just as introduction and to provide context." But despite a projection and a hedge and demonstrated sensitivity to how the remark might be taken, "the kids' work is, is certainly what's the most interesting." If writing is the kids' writing, then it takes on a different degree of importance, but "their (the students) work speak for themselves."

On this point, there is no difference among community group and parent representatives, no difference in comments of parents of elementary age children or those who children attend high school, no difference in relation to the socioeconomic status of the stakeholders, in the languages in which they choose to interact, or in any other demographic variable represented in the highly diverse population participating in the pilot study. The consistency is evident in the first impressions offered by the parents at Admiral Seymour, shared through a translator:

Translator:	*So what she likes most is about the art work...*
Interviewer:	*Mm-hmm.*
Translator:	*...that they children did, so what they see the children see, what, what's in their mind, what they used their imagination...*
Interviewer:	*Mm-hmm.*

Translator:	*…when, when to draw it and then to put it down in words.*
Interviewer:	*Okay.*
Translator:	*What she enjoys also is like from the field trip…*
Interviewer:	*Mm-hmm.*
Translator:	*…the child wrote about what they saw…*
interviewer:	*Mm-hmm.*
Translator:	*…the children wrote about what they saw. It's lively, that she can see the difference.*
Interviewer:	*Ah! So it has the most impact when you can see the children thinking and interpreting. Am I correct?*
[Assent]	

<div align="right">Seymour Parents' Group Interview</div>

And then in the opening of the interview at Byng, a parent commenting:

Parent 2:	*I found myself only focusing on Byng.*
Interviewer:	*Mm-hmm.*
Parent 2:	*Kinda thought I should try and look at something else and then realized really I didn't care. I just wanted to know what was happening in my own high school, so.*
Interviewer:	*Mm-hmm.*
Parent 2:	*Um, and, uh, that those projects that had video clips or sound clips or that kind of thing, drew me in more…*

<div align="right">Byng Parents' Group Interview</div>

Thus, the accounts require student work to succeed – require student work if for no other reason than it brings stakeholders to the text/context. Realizing student texts as participants in the register of public pedagogic texts requires the affordance of a range of semiotic resources, for regardless of the extent and/or sophistication of students' multimodal designs, they cannot be otherwise shared. In this, the proof of Proposition 1

as it relates to teachers' recontextualization of pedagogic practice and text is established, for teachers cannot meet the conditions for success (bringing student texts to the public) without being conferred these resources. However, we cannot assume that knowledge has been mobilized merely because the condition stated in Proposition 1 is met, for the realization of student texts within a shared context is insufficient for recontextualization as it is understood within Bernstein's theories. To consider this more fully, we must examine what is implicated in the stakeholders' requirements for success.

Construals of Success

As evidenced in the stakeholders' interviews, a successful account is one in which much of the ideational weight is carried by the students' work, the multimodal affordances of the internet drawn upon to share with parents and community stakeholders that which is less easily shared by other means. The teacher as author is not unimportant, but is expected to perform a particular role, indicating to the viewer what should be noticed. Though from an organizational/operational perspective this consistent realization of success is useful for developing communication strategies, a combination of student texts and commentary potentially purposed for a variety of knowledge mobilization/pedagogic uses, the distinction between student work and teachers' writing complicates recognition of the teachers' position in such efforts.[88] The distinction between, the categories built up in the unfolding text of the group interview, work against recognition of the teacher as author of the account.

Though the teacher is unarguably the more powerful in the accounts' contexts of production, the perception that teacher and student texts' are co-dependent, evident in stakeholder comments, raises challenging questions as to how the analytical unit of text is being construed by the viewer. The success of teachers' recontextualization of pedagogic practice and texts, including texts which give evidence of students' successful recontextualization of quotidian knowledge, is premised on the teacher being understood as author of the public pedagogic text. Although there are instances throughout the

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[88] Although the implications cannot be addressed in this inquiry, it should be noted that all but two stakeholders wanted every student's work included. The two exceptions were concerned about the emotional impact of opening the work of low-achieving students to the public.

interviews when teachers are recognized as such, particularly when questions position teachers as account authors, these are less frequent. We may safely assume interview participants associate teachers with students' work; stakeholders referenced teachers and schools in their comments. However, such comments may reflect little more than everyday educational discourse, schools and teachers common units for dividing up education's institutions. (Who, for instance, references their elementary classroom by its room number?) At some level of awareness, the intelligent, thinking people who participated in the group interviews knew that teachers authored the accounts. Yet, there are no comments that associate teachers with photographs/images of students at work; few that associate the teachers with the textual organization of the accounts. No distinctions are made between accounts authored by teachers, and those accounts authored by students. There are many possible contributing factors here, factors related to the stakeholders' site visits (length of time between visits to the site and the group interview; length of time viewing accounts; note-taking during site visits, etc.) and the logogenetic unfolding of the interview (context of the discussion, framing of the questions, interpersonal relations among participants, etc.). Yet none of these factors obviate stakeholders' foregrounding of student work in their descriptions of their initial responses to the accounts. With limited exceptions, the stakeholders can be observed as commenting less on the composite accounts than on their parts, and teachers realized less as authors of accounts than as authors of selected parts. The accounts are successful and information is shared, but whether classroom pedagogic practice has been successfully recontextualized and whether teachers are positioned as knowers within the registers of public accountability is significantly less clear. The tests of the propositions must go forward with this qualified understanding of success, and consider the extent to which Bernstein's recontextualization principle can explain how meanings developed.

The Teachers' Accounts

Although the purpose for analyzing teachers' accounts is to test the validity of the first and third proposition, the case is moot in regards to Proposition 1. The paramount importance stakeholders assign to student work strongly indicates that recontextualization of pedagogic practice cannot succeed without the inclusion of student work, at least not for the purpose of public accountability, if for no other reason than student work provides the accounts' drawing power. As the ability to share student work is limited unless teachers are afforded a range of semiotic resources, the first proposition is validated as it relates to the teachers' accounts.

Yet the authoring challenges presented by these texts have also begun to emerge, the apparent construal of student work as parallel rather than embedded texts challenging the position of teacher as author, thereby weakening the teachers' position as agent within the knowledge mobilization practices of educational institutions. The contradictory forces of institutional power and teachers' agency are implicated in the distinction drawn between teacher and student texts, of the recognition of a "between" relation. But it would be premature to address these issues without examining specific instances of teachers' accounts and of the instantiation of student work as embedded text, for the accounts' grammatical relations also contribute to construals of a distinction. [89] As well, the perceived distinction between teachers' and students' efforts has implications for the public's apprehension of students' recontextualization of quotidian knowledge, a direct concern of the research grant's original questions. Thus, the textual relations which support or impede construal of student work as part of rather than separate from the teachers' accounts will form the primary basis for testing Proposition 3.

Clarification of Terms

There are, quite literally, hundreds of examples of student work embedded within accounts authored by the teachers and students who participated in the "Alternative Accountability" research, these works embedded in demonstrations, galleries, and

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[89] "Embedding" is used in reference to the reproduction of the entirety of a student's text, regardless of its modal/media form.

presentations. Though embedding was not the only means by which student work might be included, and nothing in the system's affordances required reproducing students' works in entirety, the possibility of making student work available to the public appears to have proven as attractive to teachers as it was to stakeholders. Student work is most frequently included as embedded text.

Two sets of data are examined for the complex meaning relations such embeddings realize, each to a different degree of delicacy. The three student texts analysed in Chapter 8 are used as points of origin for tracing relations within and across accounts; that is, the analysis begins with the embedded text and expands outward. As well, the first accounts of the three focal subject-teachers are described holistically, providing a basis for examining differences between and within teachers' accounts.

Before beginning with the analysis, a quick clarification of terminology is required. Each of the following terms will be used to differentiate between structural aspects of the accounts, and the material they contain:

1. Level – Refers to the system-generated hierarchy of components within a digital account. Although the hierarchy is likely to influence the traversal instantiated by a viewer and its spatial dimensions potentially influence construal of text, the system's affordances and automatically generated links mitigate against control of viewers' progression through the accounts. For the purposes of the analysis, the levels will be referred to as follows:
   - "first level" refers to an account.
   - "second level" refers to a component – a demonstration, gallery or presentation.
   - "third level" refers to a student work embedded in a component.

2. Student work – Until now, the phrase student work has been used colloquially, with no attempt to build up a definition or shared understanding from the stakeholder interviews. From this point, student work will refer to complete texts authored by students, texts that were created for purposes other than communicating with educational

stakeholders. The distinction is important, for in both Jeannie's and MJ's classrooms, students authored specifically for the public accounts in addition to having their work recontextualized.

3. Student text – The term student text will be used to refer to texts authored by students which are not student work; that is, the term refers to accounts and/or account components authored within the system for the purpose of communicating with educational stakeholders..

4. Links – Lemke (2002) refers to links as forms of actional-structural ties, meaning relations that may be instantiated by the links' activation. The system affords two broad categories of links: a) those generated automatically by the system and b) those authored by teachers and students. Each will be clearly identified in the analysis.

Student Texts

From the onset, this inquiry has maintained a dual focus on knowledge in and knowledge of the classroom, the duality necessary if we are to consider how educational institutions might publicly demonstrate students' apprenticeship in knowledge mobilization practices. Though many of the examples of student work realize knowledge in the classroom, not all illustrate the mobilization of students' quotidian knowledge. The accounts containing Thofiq's, Helen's and Spencer's student work and/or texts afford the possibility of maintaining the dual focus.

Table 9 summarizes the relevant features of the accounts containing these three students' efforts. The presence and/or absence of student work, and variety of levels at which student texts are authored/embedded immediately suggests the challenges they pose for viewers in construing relations between teachers' and students' texts even before consideration of the inter- and hypermodal relations. Each text presents its own particular challenge.

Table 9 Accounts containing students' recontextualized knowledge

	Focal Student		
	Thofiq	Helen	Spence
Level of student authorship	Second and third	Second	Third
Account Author	Students (9)	Students (class)	Teacher
Student Authored components	Gallery	Demonstration, gallery and presentation	None
Student work	Yes - scans of drawing and writing	No	Yes - stop-animation video
Other multimodal elements	Photo	Photos and video	None
Links to Teacher's Account	Yes	Yes	N/A

Thofiq

As defined here, Thofiq's research project is an embedded student work; his gallery is a student-authored text but not embedded. In effect, when authoring at the system's second level, Thofiq has recontextualized his recontextualization, reusing his classroom pedagogic texts to create a pedagogic document for the public. In doing so, he assigns his research project and thereby his quotidian knowledge a value equal to his other embedded works. While these successful recontextualizations have been examined in Chapter 8, the gallery's intermodal relations, the hypermodal relations between the account's galleries, and the account's relations with other Seymour accounts have yet to be explored. As the meanings generated by these relations are central to Jeannie's recontextualization efforts, they are examined next.

The gallery's internal intermodal relations

In relation to the gallery's experiential functions, one of the more striking features of Thofiq's summary is the complete absence of any reference to his research project, or to knowledge which flowed between quotidian and academic contexts. Among the claims in Thofiq's summary is that is he "learned a lot," "a lot" realized as the Range of a

behavioural:near mental process (learn). "A lot" includes a lot about salmon, and Thofiq provides specifics regarding what was learned ("dams, logging, overfishing and urbanization"), and how it came to be acquired ("a lot of field trips to learn about water"). That which was learned is remade grammatically and modally - realized visually and linguistically - in Thofiq's book, which is comprised almost entirely of embedded student work.[90] These perform as the New in a Given-New relation, the book's rigid sequence resulting in the gallery summary functioning as Given. Though nothing in the summary specifically references the book's content except "about water", that which a viewer "should know" about and "would learn a lot of things" by reading the book, the examples provided in the summary only reference what was learned in school, not the quotidian experiences captured in his research project and poetry. The summary would seem to indicate that Thofiq believes these two student works offer nothing to the viewer.

> *Hello my name is Thofiq. I think you should read my water book because you would learn alot of things about water. I think water is a really important thing. You can learn neat stuff. I used to know not that much about water, but now I learned a lot. We learned alot of things about salmon too. For example, we learned about dams, logging, overfishing and urbanization. We went to alot of field trips to learn about water. For your safety you should know about water, and my book will help you learn.*

> Thofiq's Water Book
> The Glow Fish
> http://multiliteracies.ca/index.php/folio/viewGalleryBook/236/394/0

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[90] Martinec and Selway's (2005) conceptualization of status relations informs the analysis of logogenetic unfolding of the gallery's intermodal relations, though their work pertains to image(s) and text on a single multimodal page. This influence is noted with a caveat. As Bateman (2008) argues in relation to multimodal pages (though not in regard to Martinec and Selway's article), differentiating a "post-hoc rationalization from an analysis" (p. 48) remains analytically challenging, the systemic relations of non-linguistic modes, intermodality and hypermodality still very much a work in progress. Thus it is possible that such post-hoc rationalizing has not been completely avoided, though every effort was made to do so. Further, as stated earlier, it is important to note that the terms, analogies, and descriptions used in such instances are temporary work-arounds, placeholders for more robust theorizations of semiotic systems currently being developed by others.

Thus, despite their early placement in the book's sequence, the student work containing Thofiq's recontextualization of quotidian knowledge is not referenced intermodally; that is, the content is not realized at the second level, never used as evidence of learning or implicated in classroom practices. Though the spatial organization suggests the poem and research project are of equal value or intellectual worth, the lack of inter-level references leaves the viewer to draw their own conclusions regarding the work's significance.

What is evidenced in the gallery summary and what is subsequently reinforced by the student work is Thofiq's assessment of his learning in the class. He asserts that what he learned is valuable to others, the projections realized by the mental:cognitive process "think." Though acknowledging the subjectivity of his opinions through his use of the modals "should" ("you should read my water book"; "you should know about water") and "can" ("You can learn"), as well as recognizing a viewer controls their choices, he nonetheless communicates that it would be wise to take advantage of his offerings. As near-duplicates of his linguistic assertions ("For example…"), the digitalized embedded texts are warrants for his claims, claims regarding what he has learned and can offer the viewer.[91]

Thofiq's warrants simultaneously support the validity of Jeannie's claims, both in regards to the value of field trips and her related pedagogies. His student work exemplifies the learning process she described in "Field Trips," the knowledge displayed in his gallery summary surpassing her claims as to her students' awareness of their learning process. Yet the gallery only performs as Jeannie's warrant if both it and "Field Trips" are activated.[92] A viewer's choices may or may not lead from Thofiq's gallery to

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[91] Though describing student work as embedded does not connote a relation equivalent to a rank-shifted clause, there are ways in which such relations are more similar to rank-shifting than sub-texts (see Hasan, 1999b). The embedded works in the Seymour student accounts are analogous to reproductions of art appearing in art biographies, critiques, and histories. The images of the student work, like those of artists, retain traces of their independence, of their history as a text. But digital reproduction, particularly with these on-line books, can obscure detail: photos cut off edges of written phases; scale leaves written and visual details unreadable; reproduction renders colour gradients and fine lines imperceptible, etc. Combined with a layout that places each work on a separate page, the reduced salience of the embedded text's phases/meanings suggest a viewer may construe the embedded works as a single process - though a process in which additional processes/phases are rank-shifted.

[92] Activate/activation is the term used by the World Wide Web consortium and within multiple disciplines for clicking on a link

Jeannie's claims, may or may not create a sequence which includes components from the two accounts. Given that the value of Thofiq's gallery as a warrant is dependent on a construed relation between the gallery and other site components/accounts, its relations within and across accounts become vital.

The account's internal hypermodal relations

Thofiq's gallery is included in an account titled "The Glow Fish," one of three accounts authored by the Seymour students. Each account contains the work of seven to nine students, and "Glow Fish" includes books authored by Dinh, Shohrai, Brenda, Travis, Helen, Carmen, Peter and Albert. A partial list of the galleries is shown in Figure 50, the list of galleries a phase of the project folio. Activating the folio page, one would find that thumbnails change with each page refresh, the system randomly selecting an image from each gallery.

(see http://www.w3.org/TR/REC-html40/struct/links.html#h-12.1). Within such discourses, activation of a link results in the instantiation of a text; however, instantiate/instantiation has a related but not identical meaning within SFL. Given the centrality of SFL to this inquiry (and with apologies to the reader), use of activate/activation will be somewhat over-extended to avoid confusion with the linguistic terminology.

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Figure 50. The Glow Fish folio page – Partial gallery listing
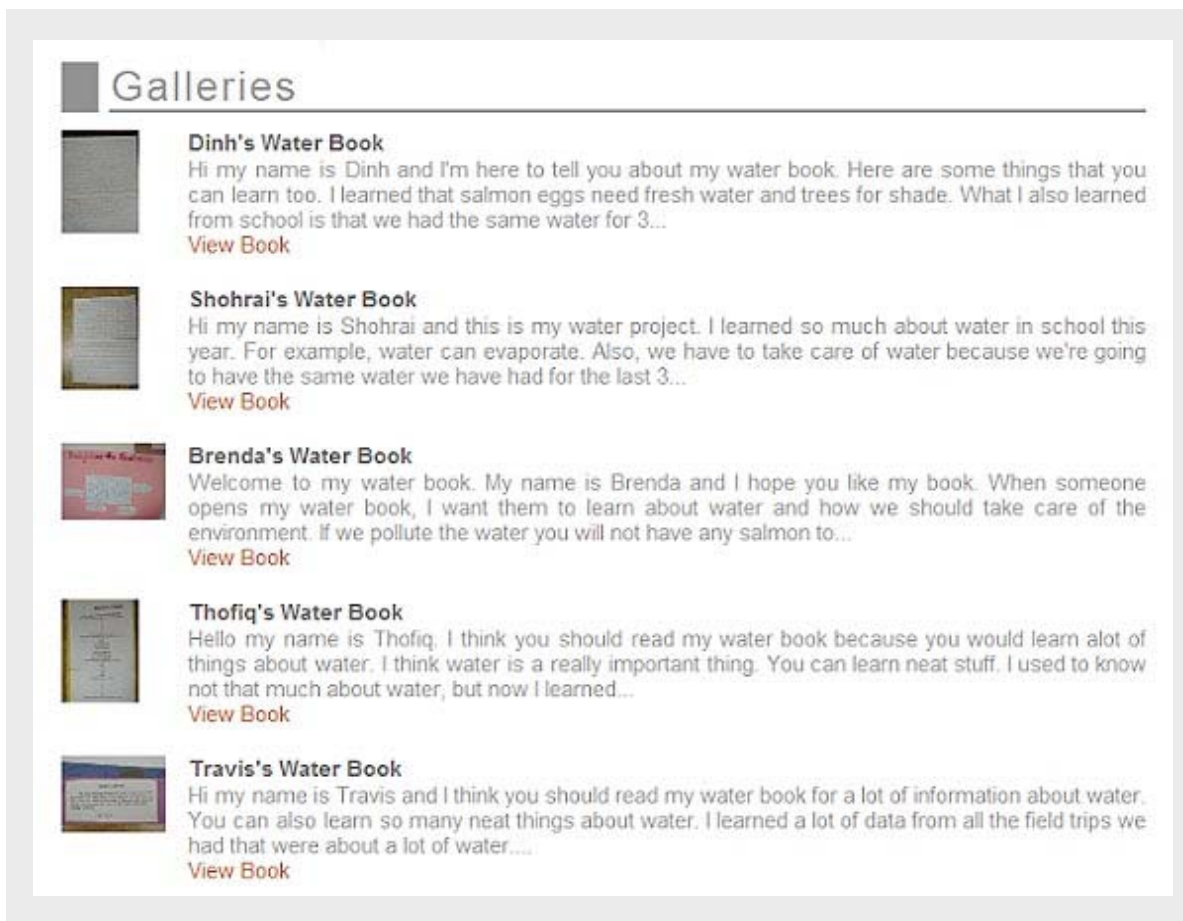
In this instance, the galleries' grammatical relations are relatively transparent, an outcome of the system affordances and the similarities in the students' efforts. The limited white space between titles, summary extracts, and links marks each gallery as distinct, the thumbnail effectively functioning as the bullet in a bulleted list. The increased amount of white space between each link and the subsequent gallery title also supports the construal of each gallery as a cohesive unit. A shared register is immediately evident in the common format of the titles; the greeting performed in the opening clause; the introduction of the author to the viewer; the realization of the viewer as an Interactant; the place of learning within the text's experiential function; etc. This shared register increases the salience of the differences in each listing's content, students stating that they learned "salmon eggs need fresh water and trees for shade;" "water can

evaporate;" "if we pollute the water, you will not have any salmon;" "animals and plants need it;" "we all need water to live and everything else needs water to drink;" and "If we pollute the water nothing will survive."

Each gallery listing includes the first 300 characters of the student's gallery summary, and the pattern and repetition evidenced in the project folio extends to the galleries, each gallery realizing a series of claims warranted by the books' embedded student text. Photos, poems, projects, speeches and posters substantiate the breadth of the students' efforts and the individuality of their learning. Though the selection of embedded texts varies significantly, the galleries overall texture never does, and this texture is shared by the sixteen galleries contained in the two additional student accounts. Each account and its galleries are potential warrants of Jeannie's claims in "Field Trips," the embedded texts' variety coupled with the shared register giving substantive weight to her arguments.

Yet, this assumes that the viewer reads the partial summaries. Font size, colour and weight combine to give the book titles ("Dinh's Water Book"; "Thofiq's Water Book") and the automatically generated link "View Book" greater salience than the summary excerpts. The combination of the top down ordering of the folio page (see http://multiliteracies.ca/index.php/folio/viewProject/236), the demonstrated tendency of the eye to move from top to bottom, and the size of the thumbnails lead to the distinct possibility that viewers ignore the summary excerpts and thumbnails altogether, and instead activate a link to a student's book (Bateman, 2008; Kress & van Leeuwen, 2006; Martinec & Selway, 2005). The activated page will include the student's gallery summary and book cover, and the intermodal relations between levels two and three combined with the book's fixed sequence support a construal of claims and warrants. However, viewers following this path will not survey – or not immediately – the depth and breadth of the information offered on the folio page or in the account, nor the extent of the warrants for Jeannie's claim. Nor will they necessarily understand the connections between galleries or galleries and the account, for activating a gallery before engaging with the folio page's proffered information obscures such relations. In effectively communicating the choices offered by the hypermodal text, the folio page's blocking and weighting detract from as well as support construal of the page's summative content.

Whether the viewer perceives the account as a whole or perceives component/phases as discrete sets of meanings – what the viewer construes from the sheer density of meanings realized in the folio page - is uncertain, and not fully recoverable from group interviews. In focusing on parts rather than whole, the folio page and the proffered information can become overwhelming. Imagining authorship of such a page is equally difficult. Nine students authored elements of the folio page, working within a framework designed by Jeannie. Three hundred characters from the opening of the gallery summaries are automatically excised and reproduced on the folio page. Gallery images cycle as thumbnails. The hierarchy of page views and automatic links allow the viewer to drill down to greater detail, as well as work back and across components of the account. Students independently chose, authored, and edited in the system, their claims and choices simultaneously compacted and repackaged into a single phase of the folio page, Jeannie's authoring decisions combining with the system's affordances to order the page. The result is not a viewing path but rather paths, an exponential number of possible sequences, any one of which unambiguously mobilizes knowledge for public accountability. But the knowledge offered each viewer is dependent on the viewer's path, and the teacher's place within public discourse is at least partially dependent on the choices exercised by the viewer.

Warrants as to the contribution of students' recontextualization of quotidian knowledge are realized in these pathways, each research project potentially functioning as a warrant. Though not every student included their research project in their "Glow Fish" gallery, six students in addition to Thofiq did. Yet for a viewer to understand quotidian knowledge's value, the proffered information must first be recognized, and such recognition is questionable within this account. At no level is quotidian knowledge's contribution identified for the viewer – not at the level of account or the level of gallery summary or within an embedded student work. The folio description, which appears at the top of the folio page, says only "Student Water Projects." The students' gallery summaries are identical to Thofiq's in that no student references their research project, the galleries' participant structures offering only knowledge gained at school. Neither is the contribution of quotidian knowledge made explicit at the level of account, within "Glow Fish" or across the student and/or Jeannie's accounts. The reader must construe its

value from the student work; that is, from a close reading of the embedded work in a single or multiple galleries. The readability/legibility of the information presented in the research projects, the textual distance between galleries and each student's embedded work, and the multiplicity of viewing paths suggest a reader is unlikely to recognize the consistent contribution of students' quotidian knowledge, and that such a construal is less rather than more likely.

Hypermodal relations between accounts

As previously noted, Jeannie's students are account authors as well as subjects. To understand a) how viewers make sense of student work in relation to the teachers' accounts and b) how viewers are made aware of the contribution of students' quotidian knowledge, we must also consider the relations between accounts, for inter-account relations are implicated in the viewers' perceptions. Two issues will be considered here: a) the ordering of the accounts and b) links between accounts.

As seen in Figure 51, "Field Trips" is the first account to appear on the Seymour school page, followed by the three student accounts which contain their galleries. Similar to the layout of the folio page, a thumbnail appears to the left of each account's name, the thumbnail randomly selected from the project's Upload Manager and changing with each page refresh. The description underneath the account's name is the first 300 characters of the project description, the descriptions for the student accounts so short that they appear in entirety. The account title is the link to the folio page, the affordance of a link signed by colour. The accounts' contributors are listed immediately below the account name, alphabetized by last name.[93] In this case, because Jeannie's class was Division Three, the system places her name before the reference to the students.

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[93] The first accounts authored in the system were projects completed during the INE. Because the composition of the project teams and the contribution of team members varied from project to project, team members were listed as contributors rather than authors. As the "Alternative Accountability" accounts share the same website, the terminology extends to the second set of accounts.

Figure 51. Seymour school page – Partial listing

Jeannie's authorship of each listed component is relatively unambiguous, the arrangement of title and name a familiar one, and within the listings on the school page, Jeannie is both first author and author of the first account. Unlike ordering of authors, which is controlled by the system, teachers control the order of the accounts, and can order and reorder using a simple drag and drop function. By placing "Field Trips" first, Jeannie has increased the probability that a viewer begins with her account, and as seen in the analysis of student voice, "Field Trips" contains explicit claims and warrants informing the viewer what they should notice. Thus, in following the sequence of the

accounts, a viewer first encounters an explanation of the field trips' pedagogic value as well as related linguistic and visual documentation and student work, and only after that reaches the student galleries. The order of the accounts and the sequencing of their content suggest that the student accounts are emblematic of Jeannie's as well as her students' efforts, and support a construed relation between the students' and Jeannie's efforts.

However, we must distinguish between a viewer's cognitive and perceptual processes here, and the corresponding differences in construed relations. If the viewer understands the relation between author and account, then construal of an account's components as phases of a single account is enhanced by Jeannie's overarching presence, and the student accounts are more likely to be understood as exemplars of the practices described in "Field Trips." But if the viewer perceives the author field without understanding the author's relation to the account, or if the author field is ignored altogether, then galleries are equally likely to be construed as parallel or independent texts, distinct from other components/accounts. The same holds true relations between "Field Trips" and the three student accounts which follow. In other words, whether the students' works are understood as warranting Jeannie's claims or whether they are effectively understood as sets of raw data is partially dependent on the viewer's construal of the account's authorship.

The last sets of relations which need to be considered are the chains of pages which can be activated from the school page (see Figure 51). Here, the dominant issue is the relations created by the authored links. Although each project folio can be activated from the school page and therefore is a potential second step in a chain, navigation from folio page to folio page can only be achieved if an author creates a "Related Project" link between two accounts, or if there is an authored hyperlink within a demonstration. The folio pages of the students' accounts can only be activated from one of two locations: a) the school page and b) one of the other two student accounts, Jeannie having networked the three sets of student galleries. "Field Trips" is somewhat different. It can be reached from all three student accounts, as well as from the folio page; one can get to "Field Trips" from the student galleries but not vice versa. Once out of the mini-network of student accounts, one is directed to the school page where teacher-authored accounts

where teacher-authored accounts dominate. To the extent that system affordances and Jeannie's authoring choices constrain a viewer's path, the constraints increase the probability that viewers understand student work as warrants for Jeannie's claims, for Jeannie's account and/or authorship is foregrounded by the patterns created by the authored links.

Figure 52. Relations between "Field Trips" and student authored accounts
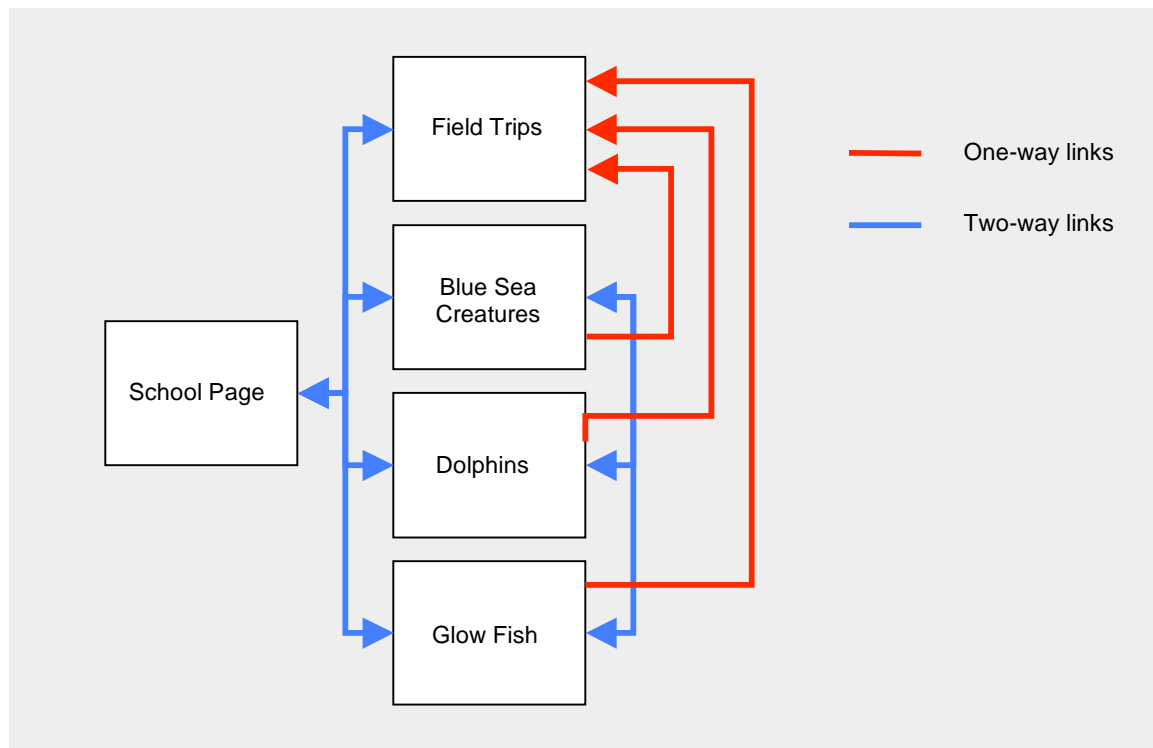
The teacher's position

The text originating with Thofiq's gallery provides an ideal opportunity for examining alternate construals of relations between student work and teachers' accounts, and the tensions that result from the interplay of system design and/or teachers' authoring choices. Its relatively simple design and uncomplicated link structure allow one to focus on aspects of accounts that are obscured by the more complex hypermodal relations of MJ's and Amy's accounts. At the text's opening, Jeannie's position is uncertain, more uncertain than within the two additional texts-as-probabilities examined later in this chapter. Thofiq's gallery is easily construed as a self-contained, self-referencing text, a

presentation to the world of his learning, an offer to others to share his knowledge. Though "we" learned and went on field trips, "we" is never explained, not in his gallery nor in the account. It is his text.

However, the gallery's textual environment and the strong patterning of the folio page components leave little doubt that Thofiq's gallery is a school text, one of a set, countering the gallery's apparent independence. The participant structure and overall texture of the students' galleries are remarkably similar, despite the variations in the learning which the students describe, and these similarities play out in the folio page's list of galleries, making it evident that the students are describing shared experiences. The experiences, of course, relate to the field trips they have undertaken, and the students' claims and texts warrant the learning and process of learning that Jeannie describes in "Field Trips." Jeannie's presence emerges when/if the folio page is activated and in relation to her opening account.

Recognition of Jeannie's position is thus dependent on the critical relation between the opening account and the three student accounts that follow, and thus dependent on the choices made by stakeholders. Each link is also a potential fissure. Students' claims regarding learning warrant Jeannie's claims regarding pedagogy, but only if the two accounts are activated. The relatively non-existent project description does nothing to position Jeannie in relation to the student work, nothing to mitigate the space between her claims and the work of her students; the authored links direct viewers to "Field Trips" without providing a path for their return, a temporary hold on a viewer's attention that signals the primacy of the teacher's perspective. Activating "Field Trips" and the students' accounts supports a construal of the components listed on the folio page as parts of a whole; activating only the students' account(s) results in the possibility that each gallery is construed as its own text. Spatial arrangements, titles, thumbnails, etc. support either view in near equal proportion, the knowledge one brings to (or leaves with) the page impacting how one understands proffered information. The ordering of the accounts, "Field Trips" preceding the three student accounts, encourages viewers to first activate Jeannie's account. If they do not, Jeannie does not exist save for her presence as a listed author.

Within and across accounts, the system's affordances intersect with students' and Jeannie's textual designs to render Jeannie's position within the text-as-probabilities as ambiguous. This is a direct contrast to her position in the context of production, in which her ability to select authors, topics, and texts is unchallenged, and to her position within the accounts she authored, in which her presence is often central. But control is ceded to the viewer once an account is made public, and though she has sequenced "Field Trips" before the student accounts, she has no guarantee that a viewer will attend to her ordering. "Glow Fish" and the remaining two student accounts are attractive to stakeholders who prioritize student work, but they contain little that explicitly links the student work to Jeannie's pedagogic practices. A construal of student work as independent texts is not unreasonable.

Equally, though prominence is given to students' relations to knowledge and their individuality in framing the student voice in Jeannie's classroom, quotidian knowledge and the design skills required for its incorporation in academic projects is absent from the claims of "Glow Fish." Students select and feature student work that realizes quotidian knowledge, but a viewer has no means of identifying or understanding its contribution. In these accounts, as in others, the more innovative features of the classroom practice are not always brought to the viewer's attention.

Helen

Because the relations between Helen's demonstration and its textual environment were considered in Chapter 8, the analysis of MJ's recontextualization practices which uses Helen's text as point-of-origin can begin somewhat differently. But before returning to Helen's text, it may help to recall that the relations (including hypermodal relations) between student texts and accounts are of interest because they impact a viewer's understanding of recontextualized literacies practices and therefore the viability of the knowledge mobilization activities. It is students and teachers as knowledge mobilizers that center this inquiry, and the grammatical relations of their accounts – as accounts, in accounts and between accounts – realize the relations of authors to knowledge, of authors to authors, and of authors to their public.

Each of these sets of relations are relevant to the analysis of knowledge mobilization practices. They are motivated by the authors' desire to instantiate a pedagogic text, to remake knowledge of/from a context for a context which is separate and distinct. Though a viewer's meaning-making resources and coding orientation (including the power differentials between author and viewer) also shape a viewer's understanding of a text, the accounts' relations are teacher-designed meanings, and the teachers' enactment of a knower-learner relation. Understanding these relations is understanding what has been offered to the public – simple or complex, clear or convoluted, consistent or conflicting. In examining the teachers' accounts, it is evident that the stakeholders' construal of relations between students' and teachers' text are potentially problematic, the independence of teacher and student texts having the power to undermine or fail to support the needed positioning of teachers within registers of public accountability. We return to the relations between students' and teachers' texts because they interact with the meanings viewers bring to the accounts, to realize the position of teachers in registers of public accountability

The demonstration's intermodal relations

Though the relations of Thofiq's, Helen's and Spence's texts are not necessarily representative of the more than 1,000 student texts included in the site, the diversity of these three alone speaks to the complexity of the authors' and viewers' meaning-making task. A viewer who activates Helen's and Thofiq's digital texts would be struck almost immediately by their differences. For example, Helen's demonstration contains no embedded texts/student work, and her demonstration more frequently realizes her summative project as a circumstance than a participant. The relations within and between accounts also differ, though both Thofiq's and Helen's digital texts are components of student-authored rather than teacher-authored accounts. From the opening clause complex ("During the process of this project, I have changed some of the ideas I had before either to make it better or the ideas just doesn't fit altogether."), Helen's endophoric references ("this project") point to other components of the account, leaving the viewer far more dependent on the demonstration's textual setting. As well, there are significantly more paths to Helen's demonstration, more links to her peers' and MJ's

efforts. These issues have already been documented in the discussion of Helen's recontextualization efforts, and will not be repeated here. However, the relations need to be revisited for what they communicate to the viewer about the recontextualization of quotidian knowledge, and MJ's claims regarding her literacies practices.

One may argue that the value of Helen's Chinese literacies are apparent in the demonstration's third phase, the video amply demonstrating how Chinese: a) supports Helen's developing skills as a producer of sophisticated multimodal texts; b) enables her to position herself as a knower in a knower-learner relation; and c) supports her peers' literacies development. Each of these points goes to Helen's apprenticeship in knowledge mobilization. But to make that argument on the basis of Helen's demonstration *alone* requires a shared assumption between author and viewer as to the value of multilingualism, and/or a coding orientation that enables comprehension of the complex design skills evidenced in the texts – the novel project, the in-class presentation of the novel project, and the digital demonstration which is a recontextualization of both. A proponent of English-only language policies (remembering that the accounts are visible to a global public) or a bureaucrat focused on the academic achievement of EAL students would not necessarily understand the skills and/or knowledge required in the demonstration's production, nor the transferable metalinguistic and metacognitive skills potentially developed in the production of such texts. This relates to the questions of perception or understanding, to first or second orders of experience, raised earlier in relation to Helen's text. There is nothing in Helen's demonstration that assists the viewer in understanding the value of her quotidian knowledge, nothing in her demonstration that provides reasons for her selections, or describes the capabilities required. Nothing foreshadows Helen's Chinese use in the video; nothing assists the viewer in understanding the particular challenges of its oral and written negotiation. In short, within the demonstration's boundaries, neither claims nor warrants make the value of quotidian knowledge explicit.

The second question we must address is the extent to which Helen's demonstration warrants MJ's claims regarding her literacies practices; that is, whether Helen's demonstration supports a construal of teacher as knower within the register(s) of public discourse. In Thofiq's digital text/gallery and those of his peers, students stake

individual claims which they warrant with their embedded texts. Each gallery is then a potential warrant for Jeanie's claims regarding her literacies practices, the viewer's path through the system determining whether or it not a gallery performs this role. However, each gallery is also capable of performing as an independent text, its claims and evidence self-contained. Again unlike the work of Thofiq and his peers, Helen's demonstration contains no overt claims regarding learning, though she provides ample evidence of her ability to think and think about thinking.[94] Instead, consistent with the text's grammatical relations, Helen's viewers must learn of the importance of her literacies practices and/or quotidian knowledge from her demonstration's textual environment. Claim(s) of learning are jointly staked at a higher level of the account, staked in the project description (authored by MJ) and in the demonstration "Links" (authored by the students). [95] The potential for her demonstration to be construed as an independent text is reduced by the viewer's dependence on the textual environment, the grammar signaling the interdependence of the texts' phases; however, analyzing the demonstration's potential as a warrant for MJ's claim(s) requires a move up a level to examine the hypermodal relations between levels and components.

The account's hypermodal relations

While the claims of the Seymour students are confined to galleries, the claims in "Zack" are authored by teacher and students and occur at multiple levels of the account.[96]

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[94] As social semiotics understands use of language and other meaning resources as the selection of motivated signs - as realizations of meanings (experiential, interpersonal, textual) we have construed as relevant to the context – at some level, all communication must be understood as a claim about the world (Halliday, 2004; Halliday & Matthiessen, 1999). However, consistent with its use throughout the inquiry, claim is used here to reference claims regarding the value of the literacies practices in which students and teachers engaged. Unlike the INE, in which such claims were the intended organizing principle for individual case studies, claims were not – or, at least, not intentionally – discussed with the "Alternative Accountability" participants. However, in most if not all accounts, teachers provide reasons or explanations for their choices, and the students frequently follow suit in their digital texts (as distinct from their embedded texts/in-class projects). In this, the students stake claims as to the value of their practices, and it is this meaning of claim which is drawn upon in this discussion.

[95] The viewer may remember that "Links" is the first demonstration in the account, and is jointly authored by the students.

[96] Where the hypermodal relations of "Zack" realize meanings that are near identical to those in "Glow Fish," the impact of such relations on the accounts' construal of teachers' position within the registers of public accountability will not be discussed again. For example, the relations

If one assumes a top-down reading path of the folio page, the first claims are contained in the project description. Its repeated use of the personal pronoun "their," in contrast to the self-referencing "we/our" and "I/my" of the demonstrations, suggests the project description is written by MJ rather than the students. Thus, though this is the students' account, it is the teacher who: provides a general description of the work; informs the viewer of its purpose; and authors the foregrounded claims. MJ is the first voice of the account, the first to interact with the public, her position as knower established in the spatial ordering of the account's phases as well as by the grammatical relations of the project description.

> *This account is a compilation of individual student representation's of their learning throughout the novel study, 'Zack', by William Bell. Each representation includes their view of their learning in the novel study and their project, which was a summative task at the end of the study. To complete their projects they were asked to 'show what they learned', integrating multiple modes, multiple media and possible interaction with the viewer.*

<div align="right">

Project Description – Folio Page
Zack Projects
http://multiliteracies.ca/index.php/folio/viewProject/249

</div>

In the opening clause, student-authored components or "representations" are realized as a post-modification of "compilation," itself a Value of an identifying clause. In turn, "representation" is taken up as the Token of the subsequent clause, and identified by two components, a "view of their learning" and "their project." The second set of referenced texts ("their project") are the students' summative tasks, which were created following the class novel study. Both sets are representations of a sort, both requiring students to "show what they learned," but the public text requires a greater degree of meta-awareness, for the students were asked to provide "their view of their learning."

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realized by the spatial arrangement of thumbnails, headings, author's name, etc. will not be discussed here or in relation to Ms. Hughes' account. Instead, the focus is on the differences between accounts, and how such differences may impact a viewer's construal of this account, and of accounts in general.

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Thus, MJ invites the viewer to understand the student texts not as evidence of their learning, but as evidence of their thinking about learning. Here, also, the project description contributes to the account's cohesiveness, for MJ's claims deepen the viewer's appreciation for Helen's reflections on her design processes, such reflections not only evidence of Helen's practice, but also evidence of a specific, valued classroom practice. MJ's claim is the context for Helen's work, the reason for her activity, and the basis for her experiential and textual selections, and MJ can be construed as the expert who points this out to the viewer.

MJ's project description also establishes the relevance of Helen's/the students' texts' multimodality. What has been learned is not to be stated directly but is to be represented, a requirement of their summative task being the integration of "…multiple modes, multiple medias and possible interaction with the viewer." This requirement of the (potentially) embedded texts results in similar demands being placed on their recontextualizations, for students cannot represent their learning/tasks to the public without engaging further in multimodal design. New forms of understanding are required of the students in this second design task, for modalities must be reconfigured in the register of a less familiar context. These recontextualization efforts are additional evidence of the students' capacity to learn and reflect on learning, to draw on multiple modes to create sophisticated signs. The summative tasks and the capacity to re-sign the tasks for a new context warrants MJ's claims regarding thinking and learning, and the realization of the claim/warrant relation further supports a construal of the interdependence of the teacher- and student-authored phases. As it is the teacher who establishes the significance of the texts' multimodality, the position of the teacher as knower is reinforced.

Again, it is necessary to foreground that construal of the teacher's position within registers of public accountability is dependent on the intermodal relations as well as the linguistic phases. In "Zack," the project description is particularly relevant because of: a) the spatial positioning of the description (see Figure 53), and b) the ideational and interpersonal meanings it realizes. All descriptions occupy the center-top position within activated folio pages, though the salience of each description varies with its length. However, the meanings realized in a description are unique to each project, and the

register may or may not be shared by other accounts. Within this specific account, if the description is read – and its position increases the probability that it will – then the functions it performs contribute to a construal of teacher as knower, the meanings generated by the system and the teacher working together to support a shared understanding.

Figure 53. Zack folio page (top)
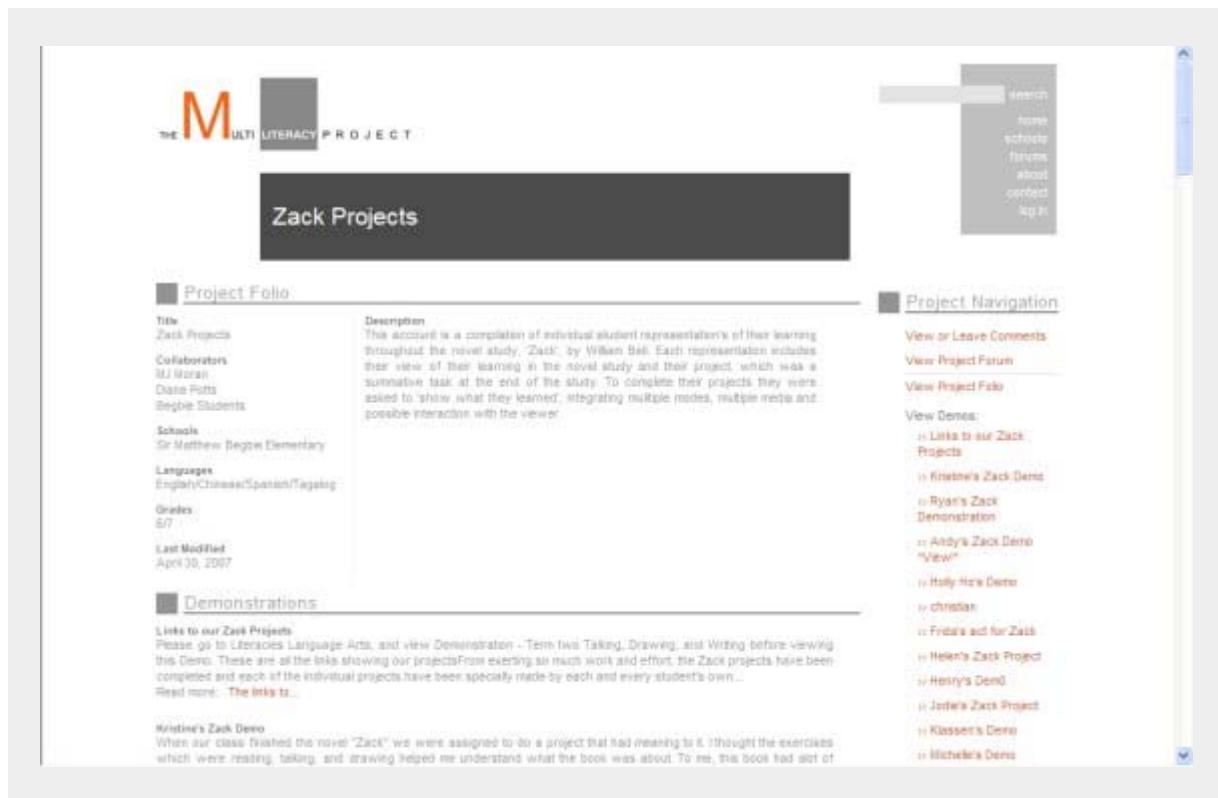
This is not an inconsiderable task, given that the complexity of the authoring task increases with Jeannie's and MJ's decision to have students author accounts/phases of an account(s). Their decision entails the enactment of at least three sets of interpersonal relations: teacher-public, teacher-student, and student-public. The decision itself is consistent with the registers of the classroom, the positioning of students as knowers who may uniquely contribute to the learning of others, and such consistency contributes to coherence across accounts. However, in requiring students to enact a relation with the public, the teachers loosen their control over the realization of these relations, as well as control over the realized relations of teacher-student. The potential heterogeneity, as well

as the differences of register across accounts and across teachers, interacts with the exponential number of pathways that a viewer may activate through the accounts to impact upon the construed relations of the dependence/interdependence of texts and the position of teachers within registers of public accountability. Within this authoring environment and within this page, MJ maintains her position as knower.

One final point regarding the claims in the project description needs to be raised, for it relates directly to the student's claims regarding their work. As in the accounts which MJ authored, the project description communicates a combination of group and individual, and the request to "show what they learned" made of them, not each student. However, representations of learning are made by "each," the implicit claim being that all have learned, but that each individual's learning may be different. If the viewer activates the first demonstration, "Links," they encounter something very similar:

> *From exerting so much work and effort, the Zack projects have been completed and each of the individual projects have been specially made by each and every student's own point of view of the book."*

<div align="right">

Links to our Zack Projects
Zack Projects
http://multiliteracies.ca/index.php/folio/viewDocument/249/13259

</div>

There are obvious thematic differences between the two claims, the students emphasizing the Cause or reason ("From exerting so much work and effort") for the projects' completion. Yet there are also clear parallels between the two claims, the projects and not the students central to their participant structure. Thus realized, the students are able to use multiple grammatical devices to draw attention to the individuality within their collective works:

- "Each" substituting for "the Zack projects" in the ranking clause;
- the adjectival "individual" classifying "projects";
- "each and every student's own point-of-view" performing as Agent in the final clause, the emphasis afforded by its position as New also allowing the individuality to be stressed in the Given "each of the individual projects";

- the Deictic "each and every," "student's (singular possessive)," and post-Deictic "own" modifying "point-of-view."

And so the description of the summative project communicated in "Links" is consistent with the account's project description, the consistency contributing to the account's overall coherence. The demonstration presents the account as a collective representation of individuals' learning, the students' claims emphasizing the individuality of their collective efforts. As a collectively-authored document, the mere existence of "Links" warrants MJ's implicit claims regarding student learning; the students' perspectives, so neatly dovetailing with the project description, further supporting her assertions as to their shared individualism. This coherence among the multi-authored phases increases the probability that MJ is construed as a knower within the discourses of public accountability, and this position is hypothesized to be an indicator of successful recontextualization.

Yet the text can only be described as a possibility, not a certainty. From the folio page, a viewer is offered 133 hyperlinks: 61 links to demonstrations, presentations, and galleries, these links accompanied by system-generated image-and-text samples of these student-authored components; 9 downloadable PowerPoint presentations; 1 authored link to "Related Project" (MJ's "Literacies" account); and 62 system-generated links comprising the right-hand navigation menu.[97] These are additional to the links comprising

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[97] Although the links in the component listings and the links in the right-hand menu are technical duplicates – that is, the folio page offers two links to each of the 61 demonstrations, presentations, and galleries - they do not realize identical grammatical relations. Each folio page lists the project's components, organized by component type, and the reader may remember that each listing includes: a) a thumbnail, randomly selected from the images associated with that component, and b) the first 300 characters of a demonstration, or of a gallery's/presentation's description. The line below the characters reads "Read more: [link]," the font and font weight/size identical to the immediately preceding characters, and the link indicated by colour. At this point, to a greater or lesser extent, the viewer is already "in" the component, and the choice available to the viewer, a choice afforded by the link, is whether or not to continue reading/viewing.

In contrast, the right-hand links provide only the name of the component, the afforded choice being whether or not to begin viewing/reading. Further complicating analysis of the grammatical relations instantiated by page activation, the register of the gallery/presentation summaries vary considerably. Consider also that the length of a gallery/presentation summary determines whether or not it appears in whole or in part on the folio page. The viewer may be mid-clause, mid-paragraph or have completed the summary at the point that choice (the link) is afforded, the grammatical relations of text, link and activated page dependent on the place of the link within the summary text. Thus, though the two sets of links are technical duplicates,

the site navigation menu, which appears in the upper right-hand corner (to the right of the page banner) of every page view. Given that "Links" is the first listed component on the folio page, it may be more likely to be activated by a viewer. But page ordering is the only factor favoring it over other potential selections, and the extent to which group interview participants were motivated to select familiar schools/teachers suggests it may not be the most important. Even if "Links" is activated, the above paragraph appears a) after the viewer is instructed to first visit MJ's "Literacies" account, and b) after a list of 26 links affording access to a component authored by each student. "Links" may be activated only to have the viewer leave the page before the final paragraph is read.

Of course, "Links" need not be activated for MJ to be construed as a knower. Should it be ignored, any of the student-authored components may warrant MJ's claims, despite/because of their differences. Neither does the complex set of probabilities constituting "Zack" require a fundamental revisiting of the relations of text and viewer, for social semiotics already posits interaction with a text as a creative act, a construal of meaning that draws upon the context of situation and the resources each individual brings to the interaction. But the explanatory power of social semiotics in conjunction with Bernstein's work draws attention to issues raised by texts-as-probabilities (in contrast to instantiated texts), these issues made newly salient by the social interest in knowledge creation and flows.

What such texts require us to reconsider, at least in relation to knowledge mobilization, is the role of the viewer in the reproduction and/or recreation of the larger social ordering, such ordering made and remade in a text's instantiation, and of the effect on knowledge flows of the shift in the viewer's role. To a degree greater than traditionally associated with written language, hypermodal texts are texts of choice, each activated link an overt act of meaning-making. Each action co-authors a newly created text, the activated text simultaneously construing and becoming the context for subsequent meanings. The process of text creation is simultaneously a doing of the social

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in the sense that the originating and activated page are identical, the relations between pages are not. Neither are the grammatical relations between each pair of links necessarily identical. The classification system for links described by Lemke (2002) is perhaps one of the most sophisticated for analyzing the grammatical relations between pages; however, the pragmatic challenge of effectively accounting for the multiplicity of possibilities afforded by a single view of digital content is unresolved.

meanings of the context, the context of culture as well as the context of situation, enacting what Halliday would describe as "the stance towards the phenomena we experience as taking place outside ourselves" (2002, p. 381). In hypermodal environments, we see the viewer having the "final say" in ordering experience and the relations to others, instantiating texts from the sets of potential paths offered by an author.

The implications of these less-than-stable texts for author-viewer relations are well-documented, such authoring contexts reducing "certain aspects of the authoritativeness and autonomy of the text," despite the viewer (potentially) being limited to the proffered textual options (Landow, 2006, p. 126). This vantage is consistent with established Hallidayan perspectives on the functional relations of context and text, any context already a sub-set of the full meaning potential of semiotic systems. Less examined in the literature on hypertext, though relevant to this analysis, are the relations of such micro-decisions to the larger social order, and the implications for knowledge mobilization. In focusing on the relative power of an author and a viewer, an abstract dyad that may or may not be theorized within a larger social dynamic, less attention may be paid to the remaking and reinforcing (or, conversely, remaking and altering) of the existing social order through such micro-decisions.

What we want to consider here is the potential impact of an individual's coding orientation on the options selected from texts-as-probabilities, including how it shapes prioritization of students' vis-à-vis teachers' work; attention to the cues provided by the accounts' spatial ordering; attention to meanings distributed across/between multimodal textual phases, etc.. As in all human interaction, the viewer enacts the values they place on the proffered information, not fully conscious of the complexity of the task in which they are engaged. The relevance of interpersonal relations to the instantiated text is seen in the interview participants' universal interest in teachers, schools and children with whom the viewer was personally acquainted. What invites consideration is how the social relations of author and viewer, the position the viewer ascribes to the teacher, are equally relevant in shaping the type of information expected from the teacher, the division of time between teacher and student texts, the expectations as to the balance of modes that should characterize a hypermodal text, etc. Within the co-authored realm of hypermodal

text, the building blocks are designed by an author, but the realized design is the viewer's.

Thus, though connections between textual phases have been strongly signaled by MJ and her students, the integration of the teacher's and students' public reflections achieved through the grammatical relations and potential grammatical relations of image, sound, hyperlinks and the written word, the text's construal of the teacher's position within registers of public accountability is dependent on the instantiated text. A viewer's understanding of the position of teachers within the institutional structures of education as well as their understanding of their social relation to the teacher are integral to the textual design which they instantiate. This may be understood as a prediction of register, the prediction guiding the viewer's selections and informing how they make meaning from the proffered account. Of course, the system exerts its own forces on the construed relations; the analysis of the accounts of Jeannie and her students derives much of its focus from the hypermodal relations of pages and accounts, and the ways in which system-generated features combine with teacher- and student-authored components to support and/or detract from a construal of student texts as warrants for Jeannie's claims. The system's functions are near-identical in "Zack" - the spatial relations and ordering of phases on the folio page; the font weight, size and colour of headings and body text; the cycling thumbnails; the use of colour to identify links; the components authored by teachers and students, of course, support a construed relation between teacher and student texts; the examined phases of "Zack" consistently position MJ as a knower. However, we have also seen how warranting claims is a complex business, accomplished by moving across as well as within accounts. Students' galleries, presentations and/or PowerPoints may be activated by a viewer who has never encountered an explicit claim as to the work's value or the nature of the students' learning.[98] As we near the end of this phase of the analysis, we must remain cognizant that we are always working with probabilities, and that the viewer will instantiate a text of their choosing.

Still unaddressed is the extent to which "Zack" construes Helen's quotidian knowledge as a valued meaning-making resource, one which contributes to her

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[98] I deliberately exclude the students' demonstrations in this list, as they are more likely to contain claims regarding their learning/the value of the enacted pedagogies.

continuing academic success. The issue serves as a useful departure point for examining the inter-account relations associated with Helen's efforts, for we must go outside "Zack" to find the explicit claims.

Hypermodal relations between accounts

As has already been amply illustrated, relations between student texts and the teachers' claims become progressively more complicated at increasingly higher levels of the accounts, the exponential number of texts which might be instantiated more clearly revealed. The movement outward from the students' texts is purely metaphoric, for hypermodal texts have no pre-determined directionality, only afforded options, and Thofiq's, Helen's and Spencer's texts are merely arbitrary but convenient starting points for comparing the structures of the teachers' accounts and their complex construals of meaning. Exactly how complex these texts-as-probabilities are will be better illustrated when viewing the first accounts of the three focal teachers from the top down. However, MJ's accounts afford a useful vantage on construals of the value of students' quotidian knowledge because MJ's claims and those of her students are woven across accounts, contextualized within descriptions and analysis of pedagogic activities as well as within meta-analyses of the year's work, and draw upon an array of media and modes. Not every possible linkage will be examined as the numbers are simply too large for anything but a quantitative analysis. Rather, keeping in mind the purpose of this inquiry, linkages that illuminate issues of multimodality and register as they are implicated in the propositions have been selected.

Before beginning, however, it should be noted again that many of the system-generated relations analysed in conjunction with Jeannie's accounts are equally relevant here. Perception/understanding of authorship, cycling of thumbnails and sequencing of accounts are just some of the variables whose impact extends to MJ's accounts. As with Seymour and Jeannie's "Field Trips," MJ's "Literacies – Language Arts" is the first account listed on the Begbie school page (see http://www.multiliteracies.ca/index.php/folio/viewSchoolProjects/6); the students' account "Zack" appears four listings below. Similarly the claims which MJ advances in her first account, claims directly related to the privileged practices of thinking and

thinking about thinking, are warranted by the student-authored components of "Zack" just as Jeannie's claims are warranted by her students' water books. Despite their relevance to the text-as-probabilities, these relations are glossed for reasons of expediency, and so as to follow the paths from Helen's demonstration to the claims which (potentially) illuminate her work.

"Zack" contains no claims related to Helen's use of her home language. Neither she nor MJ assert its value, describe the skills required in the related textual designs, nor explain to the viewer the complex meaning relations which they instantiate. Those claims are staked some distance away from the demonstration, despite its potential as compelling evidence. The most explicitly signaled connection is between the students' demonstration "Links" and MJ's "Literacies." As we have seen earlier, "Links" opens with a request that viewers visit "Literacies" before proceeding ("Please go to *Literacies Language Arts,* and view Demonstration - Term two Talking, Drawing, and Writing"), and viewers are specifically asked to attend to the demonstration "Term Two" (see http://multiliteracies.ca/index.php/folio/viewDocument/249/13259). Though no direct link is provided, the students have selected "Literacies" as a "Related Project" and this decision causes the system to generate two associated links, one in the right-hand menu and one near the bottom of the folio page. The right-hand menu is visible from "Links;" the other cannot be seen unless the viewer exits "Links" and scrolls to the bottom of the "Zack" folio page. Either link activates the "Literacies" folio page, but neither takes the viewer directly to the desired demonstration.

Requiring action by the viewer creates a choice point, and several such points are created by the students' design decisions. To use the folio page link to visit "Term Two," as per the students' request, a viewer must: a) use the browser back button or the folio page link to return to the folio page; b) recall the account name "Literacies;" c) locate the account link; d) activate the link; e) recall the name of the demonstration "Term Two;" and f) activate one of the demonstration's links. Every choice point lowers the probability that the requested path will be selected, every choice affording options, every option the possibility for a path other than the one suggested by the students. For the viewer entering the Begbie accounts through "Zack," this elongated chain weakens the construed relations between it and MJ's related account - and correspondingly weakens any

connection between MJ's claims regarding the value of students' quotidian knowledge and Helen's demonstration – despite the relation specified by the students.[99] Within this particular hypermodal space, the students could have authored a direct link between "Links" and "Term Two" but did not, creating a division between the two accounts.

A direct link to "Term Two" would have made the connection between "Zack" and MJ's account more salient, but would still have left the viewer some distance from MJ's references to students' use of home language. The demonstration "Term Two" is comprised of four documents, bread crumbs to each document offered at the bottom of the folio page's listing for the demonstration.[100] As with all multi-paged demonstrations, the first 300 characters of the first document appear as part of the listing, furthering the perceptual distance between "Zack" and the references to home language use. The first and second pages of "Term Two" describe the why and how of the novel study, and include video of the pedagogic tasks in which students engaged during shared reading (http://multiliteracies.ca/index.php/folio/viewDocument/110/9915). The practices are multimodal, the students listening, drawing, talking, writing and listening again. The third and fourth pages describe the summative projects, including the practices leading up to their creation and the students' presentation of their projects to their peers. Again, there is no reference to home language in any of these documents.

To reach the reference to home language, a viewer must activate the demonstration's third document, thus gaining access to a further link. This link, located approximately one-third down the page, activates a text and image presentation comprised of 21 photos and scans (http://multiliteracies.ca/index.php/folio/viewPresentation/110/125). The presentation elaborates upon the practices leading up to the summative project, using word and image to detail two lessons on multimodality that were taught after the novel was completed but

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[99] Because hypermodal texts afford multiple points of entry as well as multiple viewing paths, the distance between warrant and claim – or claim and warrant – could be assessed from multiple directions as well as along multiple paths. Again, the orientation of this portion *from* the student text is arbitrary, though not unreasonable given the register of the textual phases and the interview participants' interest in student texts.

[100] The term *breadcrumb* refers to one in a set of links whose layout mirrors the hierarchal/sequential structure of the referent webpages. In this system, breadcrumbs are generated only for multi-page demonstrations, and appear as part of the demonstration's folio page listing as well as at the top of each of the demonstration's pages.

before students began their summative projects.[101] The sequenced slides show the students' developing understanding of the relations of modes and media, and the connections they forged between multimodality and Gardiner's theory of multiple intelligences (1983). In effect, the presentation demonstrates how the reading, drawing and writing practices described in the demonstration's first two pages are transformed into more abstract understandings of meaning systems. Claims and warrants vis-à-vis multimodality flow through the presentation, as they do throughout "Term Two" and "Zack," and MJ's position as knower within these components is easily identifiable. But no reference to home language appears until Slide 18.

As one may recall from Chapter 8, each presentation slide includes: a) the presentation description, which is positioned below the image and constant across all slides, and b) a slide annotation, which is positioned to the right of the image and is different with each slide. The annotation for Slides 16-18 reading as follows:

Slide 16	The process continued, each group adding more media and solidifying their understanding of the connection between mode and media.
Slide 17	The neat and tidy beginning became a 'web' of meaning making for all involved.
Slide 18	To which Diane added language. Here you can see Andrew and Frida translating a Spanish piece for the class.

Although language is presented as an addition to the "'web' of meaning," the web a literal and figurative representation of the relations between mode and media, this is not quite accurate. Indeed, a viewer would recognize that the linguistic mode is realized as a process or a participant from the presentation's outset, and that it is home language that is added. Again, MJ has construed the viewer as an Interactant ("you can see") who can perceive Andrew and Frida in the act of translating, though the presentation contains no sound and no Spanish is visible in the image (see Figure 54). The practice of drawing upon home language has now been woven into the pedagogic webs, the web of the multimodal lessons and the web of accounts. Claims regarding thinking, questioning, integrating and laughing immediately follow the description of home language use, the

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[101] The multimodality lessons were taught by the author of this thesis.

preceding slides providing the supporting evidence for the claims. Within the descriptions and explanations of students' multimodal activities in "Term Two," home language is most salient at this point.

Figure 54. Slide 18 – Frida and Andrew translating

But not so salient. Further, if Helen's demonstration is the viewer's point of departure, the demonstration's connection to these claims is tenuous at best. The distance between the two text phases is large, the number of choice points substantial. Though Helen's demonstration video shows her translating Chinese text to her peers, just as Andrew and Frida are "seen" translating in Slide 18, none of the authors explicitly connect the functional use of home language to the claims. The written directions in "Links" may cause a viewer to reflect upon the relation between the described pedagogic practices and the student projects in "Zack," but construal of a connection between the

pedagogic claims, practices, and home language, much less home language in Helen's sophisticated multimodal designs, seems less likely.

This is central to the objective of this analysis, the test of the third proposition. The viability of the teachers' accounts is hypothesized as dependent on the development of a register in which teachers occupy a recognized position from which to recontextualize pedagogic practices and texts. In turn, successful recontextualization relies on construal of student work as evidence of teachers' claims, construal of student work as independent texts weakening the claims and thus a teacher's position as knower within discourses of public accountability. The analytical challenge, then, is greater than determining whether teachers' claims are warranted, warranted by evidence presented within the account ("Literacies," independent of "Zack," is capable of performing such a task) or without. The challenge is also to assess whether student texts/work are construed as evidence supporting a teacher's claim, an additional challenge that results from a viewer's ability to activate pathways across as well as within accounts.

The destabilization of text - of what is "in" and "out" and/or of where it might begin and end – is a central property of all hypermodal documents, not only these accounts (Bush, 1945/1999; Lanham, 2006; Nelson 1982/1999). Whereas this inquiry has addressed accounts as texts and account components as phases, the interview participants' comments, the ways in which they distinguish between the work of student and teacher, construes yet another set of relations, one in which student work is perceived as independent. This independence of much smaller (and more plentiful) units signals how these stakeholders perceive the site's affordances, communicates the freedom they accord themselves in constructing a text from the proffered components. Student texts/work become potential points of entry and central attractions, the teachers' texts consulted after and not before, with consequences for teachers' position within the register of the activated text. As viewers and authors may or may not construe accounts as texts - as meaningful wholes - we are required to consider alternate sets of relations, particularly relations across accounts, for their implications for register.

But before further consideration is presented, it is useful to briefly examine two additional components which feature Helen and her use of home language. These components are helpful for reflecting upon alternatives to linear tracings of claim and

warrant and on the processes in which viewers engage with texts-as-probabilities. For this we turn to MJ's account "Assessment, Grading and Communicating" (hereafter referred to as "Assessment"), which is connected to Helen's demonstration via "Literacies" (see http://multiliteracies.ca/index.php/folio/viewProject/261).

Linked to "Literacies" as a related project, "Assessment" was authored and made public toward the end of the research period and differs from earlier accounts in that its content cuts across subject areas. As the title suggests, the topics center on assessment and on communication with parents, and Helen's two appearances in this account directly relate to her use of home language. In the demonstration "Communicating," the document "Open House" contains an embedded video clip of a Cantonese exchange between Helen and her mother. In the demonstration "Home Language," Helen again appears in a video clip, this time in the document "Helen's Perspectives," which shows her responding to MJ's questions about her use of Chinese.

Though differences are apparent in the register of the video exchanges and in their grammatical relations with the other phases of the pages, both instances of video are used as warrants. "Communicating" recounts the planning and organizational efforts involved in hosting an open house for parents, an event which replaced the more traditional second term parent-student-teacher conference. In addition to the written text, it includes three embedded videos as well as: a) links to student presentations prepared for the open house and b) additional images of the event. Woven throughout the demonstration are claims regarding the value for students and parents of the associated practices. Home language is introduced into the recount in the final sentence of the fourth paragraph, which reads "When you look closely at the projects you can see the students at times used their First Language in the text or audio" (http://multiliteracies.ca/index.php/folio/viewDocument/261/13098).[102] Again, consistent with the earlier observation of Andrew and Frida, the account construes viewers as Interactants who can draw on their own perceptions ("look closely"; "see") to verify students' academic use of home language.

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[102] The reader will note that MJ uses the term "First Language" in a manner near-synonymous with this inquiry's use of "home language."

The relation of home language to the students' academic endeavors is foregrounded throughout much of the remaining document, not atypically as a circumstance of Manner or a hypotactic enhancement performing a similar function. For example, the open house is made more welcoming "by including any First Language they could" and the discussions with parents regarding learning are conducted "in their First Language." Video and writing function to complement each other, the second video showing a clearly audible Cantonese exchange between Wendy (a Grade 6 student) and her mother. The adjacent writing describes how home language comes to be used and the role it plays during the open house:

> *Students in the class are required to 'flip' between English and Cantonese, (or other First Languages), at times to explain their learning to their parents.*
>
> *This 'flipping' between languages requires a sophisticated understanding of the languages as well as the concepts. I encourage students to practice explaining the academic concepts in both languages to ensure their First Language is expanding with their English.*
>
> Communicating – Open House
> Assessment, Grading and Communicating
> http://multiliteracies.ca/index.php/folio/viewDocument/261/13098

Although the top-down orientation of the page competes somewhat chaotically with the left-right positioning of video and text, the references to Helen follow immediately below, to the right of the third video (see Figure 55):

> *This video begins with Helen welcoming her mom into the class. With her mom Helen speaks Cantonese. Helen's mom was impressed by all of Helen's work, but especially by the way Helen included Cantonese in her 'Zack' project.*
>
> Communicating – Open House
> Assessment, Grading and Communicating
> http://multiliteracies.ca/index.php/folio/viewDocument/261/13098

Helen and her mother occupy the center of the stilled image, the annotation "Parents and guests arrived; students took the role of presenter" superimposed over it.

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The pair are the subject of the clip's first ten seconds, and though the audio is less audible, the written text compensates by identifying the language spoken as Cantonese:

Figure 55. Open House – Document excerpt

When we get ready to present we often practice by ourselves and then with a partner. In this video Wendy is practicing her presentation of the Open House with Jason, Wendy is the student, Jason is the parent.

She begins with the French video, moves to the French poster, views the Math patterns and ends by leading Jason to the computer for the PE presentation.

Apparently, parents and students nod a lot when presenting and viewing.

Later that afternoon Wendy's mom came to view her work. This is a video of her sharing one of the Math presentations with her mom. Notice in this clip, unlike the first clip, Wendy speaks Cantonese. With Jason Wendy spoke English.

Students in the class are required to 'flip' between English and Cantonese, (or other First Languages), at times to explain their learning to their parents.

This 'flipping' between languages requires a sophisticated understanding of the languages as well as the concepts. I encourage students to practice explaining the academic concepts in both languages to ensure their First Language is expanding with their English.

This video begins with Helen welcoming her mom into the class. With her mom Helen speaks Cantonese. Helen's mom was impressed by all of Helen's work, but especially by the way Helen included Cantonese in her 'Zack' project.

The video shows a progression of the afternoon. Parents, visitors and students came and went freely over the several hours that were the Open House.

Together, the videos and writing form claim and warrant. Altogether, MJ has asserted that "…'flipping' between languages requires a sophisticated understanding of languages as well as concepts;" that home language use is required for explaining learning; and that home language use impresses parents, with Helen's Zack project brought in as the source of her mother's satisfaction. Again, as in Helen's demonstration, the summative project is central to the discussion, but not as a participant. Again, the summative project is a circumstance of learning – here Helen's mother is learning about Helen's schoolwork - and emblematic of this "way" of thinking and doing in the classroom. As in her discussions with her peers, Helen's use of Chinese allows her to position herself as a knower, although in a very different context. Patterns of meaning are repeating across textual distances, though the connections between phases are otherwise tenuous.

In "Helen's Perspectives," the exchanges between Helen and her mother become the topic of discussion, although the open house is never explicitly referenced (http://multiliteracies.ca/index.php/folio/viewDocument/261/14016). The document is composed of a short paragraph followed by a video clip, this clip showing 2-3 students sitting facing the camera. The image is closely cropped, but sufficient background detail is provided to indicate that the video has been shot in the classroom. Helen sits to the viewer's right, and it is obvious that the video has been edited to include only Helen's comments. [103]

The document's opening paragraph expands what has already been claimed regarding home language, home language now a possessive attribute, a "way of understanding" in a context in which multiple ways of understanding are sought. The characterization of home language as a "way" is consistent across the two demonstrations/documents, home language a way of knowing and demonstrating knowledge, the way Helen used her home language having particularly impressed her mother. "Way" is thus part of a pattern across textual phases, a continued point of

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[103] The second document in the demonstration "First Language" is titled "Frida's Perspectives" and includes the edited comments of the young woman sitting in the middle of the three students. The juxtaposition of the two documents, coupled with the disjunctures in each video clip (shifts in body position and gaze, discontinuities in tonal phrasing, etc.), make it apparent that the students are: a) answering questions/responding to prompts and b) that the responses have been reorganized if not reordered for the public document.

reference in the discussions of thinking and thinking about thinking, and Helen's comments are introduced as her "perspective" or reflection on this way of knowing: [104]

> *Well, once you talk Chinese to other people, like not only they learn more of your language, but like at the same time your understanding your language like a bit more so. Like since you we basically learn English like all through elementary like once you use Chinese again you feel really weird but then like if you get to talk Chinese in the class you'll feel more comfortable.*

<div align="right">

First Language – Helen's Perspectives
Assessment, Grading and Communicating
http://multiliteracies.ca/index.php/folio/viewDocument/261/14016

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Our interest, however, lies with the patterns of meaning instantiated across accounts and phases, and so we will focus on Helen's comments pertaining to her interaction with her mother:

> *My mom like felt really surprised because she never knew that like we actually use Chinese as a display. Like she thought it would be only English. Because at first she didn't want to come because she can't even communicate like but then like after she saw the Math and my Zack, she she knew that like our classroom wasn't just like English standard so.*

"…we use Chinese as a display;" Chinese is a Medium for displaying learning. Perhaps Helen's understanding with the relation of language and knowledge is still developing, but her comments leave little doubt that she finds her home language a useful resource. An attentive viewer sensitive to the nuance of Helen's comments would find

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[104] The concept of "way" is built up across MJ's accounts, consistently used to describe students' relationship to knowing and knowledge. Consider, for example, this excerpt from the final document in "Term Two:" *The presentations of the projects were successful because they were presenting thoughtful, rich and unique projects and also because as viewers the students value the knowledge and the representation of the other members of the class. It is a way of being in the class that I have scaffolded and modelled from the first day of school and continue to scaffold and model each and every (day) of school (http://multiliteracies.ca/index.php/folio/viewDocument/110/13096).* Though the focus here is the use of "way" in relation to home language, this "way" is a sub-category of a broader classification built up by MJ and used to describe her pedagogic practices.

evidence to support MJ's assertions regarding the value of engaging with multimodal text, find connections to the thought processes Helen described and modeled in her demonstration, and find raw data consistent with the practice of thinking about thinking. A less reflective viewer, a viewer who perceives rather than reflects on the textual offering, would "see again" Helen, Helen's mother, "Zack," and home language/Chinese use. What is literally seen (and heard) in "Open House" is now presented by Helen, reseen and reheard. Helen's mother was a subject in the "Open House" and MJ's commentary on the video. Helen's mother is the subject of Helen's comments. Instead of impressed, Helen describes her mother as surprised; however, the importance of home language use remains salient.

What may be less obvious to a viewer is the way in which MJ ventriloquates Helen's comments in this document. In a written text, Helen's perceptions would most likely take the form of a projection, with MJ reporting the comments as direct or indirect speech. With such texts, there would be little doubt as to MJ's position as author, and/or the extent to which comments had been remade to suit the author's purpose(s). "Helen's Perspectives" is fundamentally no different, for the hypermodal environment is merely an opportunity for MJ to project by other means, to quote Helen using video rather than written text. But the shift in modality also shifts the relation to the viewer, MJ now the unidentified voice off-camera. Helen's gaze is directed at the viewer, and a more direct relation is established between the two than could be achieved through reported speech. Tone, gaze, pacing, smile – regardless of the essential asynchronicity of the communication, all contribute to the immediacy of the viewer's experience, remove the teacher from the exchange, and enhance the available perceptual evidence. In creating a context in which Helen can be seen and heard, authorship and the text's boundaries are further blurred.

So there is a claim and a warrant, a claim and warrant consistent with the claims in "Open House," claims which can be further warranted by Helen's demonstration. The same student and the same novel study and the same parent are involved in each. One could activate a path from Helen's demonstration to these additional accounts/components/phases, but there are many choice points in-between, many other options available. If one were to wend one's way through these associated documents, it

might not be during the same session or by the most direct path. It is as least as likely that not all components would be encountered, or not consciously connected. These choices are the viewer's, shaped by their interests and orientations, with the author a designer of possible texts, probable texts, but never a text. What then of the construed relations between the teachers' accounts and student work, and therefore teachers' position within discourses of public accountability?

The teacher's position

In positing that the viability of teachers' accounts of literacies practices is dependent on the development of a semiotic register in which teachers occupy a recognized position from which to recontextualize pedagogic practice and texts, we are testing the capacity of Bernstein's pedagogic device and, more particularly, the recontextualizing principle to support investigations into knowledge mobilization. The proposition positions teachers as participants in the discourse of public accountability, occupying not only a position but a recognized position - seen, visible, known, legitimated – from which to contribute to public discourse on education. The proposition does not limit or constrain teachers in what they may do; rather, it establishes the minimum they must be able to achieve with their texts.

In working outwards from Helen's demonstration, we cannot be certain whether MJ has achieved such a position, and the ambiguity results from design choices as well as the inherent indeterminacy of hypertext. There is ample evidence that Helen and her peers understand themselves as engaged in jointly authoring a text, and that they understand authorship as shared with MJ as well as amongst themselves. Here and in Chapter 8, we have seen the dependence of Helen's digital text on its textual context, the endophoric references pointing outward to "Links" and the project description. The circumstances of her learning are also difficult to understand without descriptions of the novel study and summative projects provided elsewhere in the account/system. This dependency contributes to the overall coherence of the account, and supports construal of the account as a textual whole, for it forces the viewer's attention toward the folio page to better understand what they have read. Here the viewer encounters MJ's project description, and the claims regarding student learning provide a thematic center for the

work of individual students, the claims providing a focus for the viewer as they attend to one or more of the students' components.

In choosing to author the project description, MJ has signaled her position in relation to the students and to the viewer. Although the account is authored first and foremost by the students, it is MJ who positions the student texts in relation to each other and in relation to the viewer; that is, she exercises the power of her position to set the context for both. She is the agent of recontextualization, with the power accorded students to publicly reflect on their learning limited to the power she has chosen to share. Although MJ's and Jeannie's decisions regarding student authorship are similar, MJ's use of the project description provides her with a visibility and a place that Jeannie does not have.

In "Links," the students' document communicates a similar understanding of MJ's relation to these texts and to the students themselves, construes a dependency that is realized in their request for the viewer to first visit "Term Two." At this point, however, authoring choices detract rather than enhance the position of the teacher within public discourse. The path from here-to-there is long, the students either not understanding or not choosing to provide a direct link between their demonstration/account and the referenced demonstration/document within "Literacies." At each of the multiple choice points between "Links" and "Term Two," authorship is handed to the viewer, a viewer whose context of production is distinct from that in which MJ and her students authored. In this context of public discourse where the stakeholder is agent, the viewer's orientation to meaning predominates and shapes the activated text.

At the most fundamental, these are issues of register - issues of the interpersonal as well as the ideational function of these texts, issues of deferral and obedience, issues of choice and power. Such issues are issues of context as well as text, of the recognition and realization rules generating specific instances of public discourse and of the coding orientation(s) of those who mutually engage. The accounts' hypertextuality brings these issues into play in ways that have been less considered within the discourse(s) of democratic accountability; that is, in digital environments, a viewer's coding orientation not only impacts on the meanings construed from proffered information, it frames the text's construction. Even within the limited interactivity of these accounts, with the

viewer limited to what they might choose rather than how they might engage, it is the viewer who is the final author.[105]

This returns us to how "text" is construed by the participants in this inquiry. We cannot determine with any certainty how the students' and/or MJ's understanding of accounts intersected with their understanding of hypermodal authoring to shape their conceptualization of text. However, it is entirely possible they equated text with account, and that the grammatical resources employed to generate cohesion within "Zack" were not employed across accounts because the accounts were considered distinct. Obviously, the students believed that the content of "Term Two"/"Literacies" was useful to the viewer, useful (perhaps) in the way that is it useful to read Volume 1 before proceeding with Volume 2 in a books series. Useful but not essential. "Zack" can stand on its own in ways that Helen's demonstration cannot, for none of the references require reading "Term Two" to be understood. And the request in "Links" is most decidedly that, a request, a grammatical choice that construes the optional nature of "Term Two" as well as instantiating the relation between viewer and author. The accounts are not dependent, and it is not unreasonable to understand the account as a text, particularly when the students were given an account to author. But the distinction is not as great as the students may have believed, a difference in understanding with consequences for meaning.

The distinction between accounts may mean little to viewers, who bring to the site no history of an account or working within accounts, and who are able to traverse accounts as easily as they move within. No established register exists among these groups – parents, administrators, community stakeholders, teachers, children – for such knowledge sharing practices, there being few (if any) external references for engaging with these forms of pedagogic texts. Thus it is perhaps not surprising that stakeholders so frequently draw analogies to walking down school hallways, sitting in a classroom, and peeking in windows. These are relations to student work and to teachers with which stakeholders are familiar. But they are also relations in which the teacher has no role as a creator of public pedagogic text, has no role in recontextualizing pedagogic practice and

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[105] I continue to use interactivity as the term is understood within theories of persistent conversation (Bregman & Haythornthwaite, 2001).

texts for the purpose of public accountability. Faced with an unfamiliar context and the ambiguities of hypermodal text, the participants' construe text in a manner consistent with their previous encounters with teachers and schools, and separate the student work from the teachers'.

The inherent ambiguity of hypermodality again needs foregrounding as an ever-present factor interacting with the system as well as students' and/or MJ's design choices. Options are endemic to internet-mediated, hypermodal text, browsers offering back-and-forth, multi-paged, non-sequential viewing even when authors limit the designed options. In recognizing students' seeming inability to fully appreciate the viewing contexts' complexity, judgement must be tempered with the recognition that the students' capacity to anticipate such multiplicity is still developing. Neither should it be assumed that the accounts fail because authors and viewers do not share a construal of text. We need only note its consequences for teachers' position in public discourse.

These instances serve to illustrate ways in which authors address the uncertainties of hypermodality, and to consider design choices that may or may not have impacted on viewer's perceptions of recontextualized knowledge. Helen's academic use of her multilingual capabilities, and MJ's efforts to draw attention to their contribution again are useful. The grammatical relations between the two are weak. Neither Helen's demonstration, the "Zack" project description and "Links," nor "Term Two' and its linked presentations contain explicit claims regarding the value of Helen's/other's quotidian knowledge. Students' capacity to draw on all available knowledge, including knowledge gained outside the classroom, is not foregrounded. At all levels in these accounts, classroom activity is more conventionally classified, classified by discipline (Language Arts), classified by pedagogic practice (novel study), classified by author (teacher and/or students). This is not to suggest that Helen, her peers or MJ are unconscious of quotidian knowledge's value or of the complex design decisions which capitalize on this knowledge; the emphasis on multimodality suggests otherwise. However, there is little to aid the viewer's understanding, and what support is provided (ex. the slide of Andrew and Frida translating) is less plentiful and in competition with more strongly realized claims regarding learning and its contexts. The path from Helen's

demonstration does little to enhance the viewer's understanding of all that her demonstration warrants.

However, a linear analysis is only one approach to evaluating the proffered information. Another is to consider patterns of repetition which occur across accounts; that is, to consider the textual phases and components not as elements of an argument but as repetitions of experience, an experience not inconsistent with walking down a school hallway. Helen is repeatedly present across the accounts, her use of Chinese and her reflections on its use appearing again and again, sometimes but not always explicitly linked to her "Zack" project. Oral and written language, images and video of interaction, exchanges with peers and a parent – all are shared and (occasionally) reflected upon. Should a viewer follow links to the related project "Assessment, Grading, Communicating," they would find claims related to home language deep within two project components, but it can be reasonably argued that the textual distance is too great and the salience of home language too limited for a viewer to construe Helen's demonstration as warrant for these claims. Yet viewers repeatedly encounter home language use, Helen's and others', across the disjunctures of their self-assembled texts. Here is a register with which teachers and stakeholders are familiar, a register in which teachers offer up student work not as evidence of pedagogy but as an opportunity to experience what a child has accomplished in school. In the hypermodal space of the accounts, these experiences are compressed in space and time, the sensory experience incomplete but nonetheless visually and orally rich. The digital text performs not as analysis, but as an experience of school.

Drawing on an existing register in which teachers are essentially providers of data is not unproblematic in relation to teachers' position within discourse of public accountability, and/or in the implications of the existing register for knowledge mobilization practices within the institutions of education. But before considering further how the qualified success of accounts fits with the construal of independent texts and with pattern replacing argument, there is one more example of connections to be examined, one more instance of a text which radiates out from a student work, and that is Spence's stop-gap animation of a Shakespearean sonnet.

Spence

Despite the similar meanings generated by the system and realized in the hypermodal relations of "Byng Arts," the grammatical relations between Spencer's video and its textual environment are yet again notably different from either Thofiq's or Helen's. As with the analysis centering on Helen's demonstration, the emphasis here is on the differences. To begin, neither Spencer nor his peers authored in the system, unlike the student authors in "The Glow Fish" and "Zack." The result is that no student-generated claims, description, or hypermodal relations are realized, nor are students listed as account contributors. Instead, Spencer's video is realized as an embedded student work, just as each page of Thofiq's book is an embedded student work, and exists only as a warrant for Ms. Hughes' claims. Within the context of production, the text's register and thus Ms. Hughes' position within public discourse are an outcome of her decisions and the system affordances; the activated text is co-authored with the viewer. In this, there is at least the semblance of greater control on the teacher's part.

Ms. Hughes' accounts also differ in the volume of written text, and in the text's location within the accounts' hierarchy. Among the three focal teachers, Ms. Hughes consistently writes the least and uses the project description field to hold a greater percentage of her linguistically realized meanings. In this, her use of this description field is similar to MJ's in "Zack," though MJ's use of this description field varies significantly, in the volume and nature of the ideational meanings realized across accounts. Thus, in relation to the written text, Ms. Hughes' accounts initially appear to most closely correspond to the preferences expressed by stakeholders.

The hypermodal relations of the demonstration in which the video is embedded are not analysed separately in this instance because the project component has the same author (Ms. Hughes) as the account, suggesting construal of the demonstration as an independent text will not impact the teacher's position with the account's register. That is, even if the demonstration is construed as an independent text, the voice remains the teacher's. Thus, though we begin with the demonstration, we can proceed almost immediately to the level of the account.

The account's hypermodal relations

The demonstration "The Shakespearean Sonnet through Multimodal Analysis" (hereafter referred to as "Shakespearean Sonnet") is one of six components in the account "Byng Arts (MIEN 8)," and is embedded within one of demonstration's two documents (http://multiliteracies.ca/index.php/folio/viewDocument/222/9431). As seen in Figure 56, the document has two phases: a) Spencer's animated video and b) a block of written text. For the page to be activated, a viewer must have clicked a link titled "Lego Stop Animation," and the title results in the video performing as the Given in a Given-New relation, its left-hand page position consistent with this interpretation (Kress and van Leeuwen, 1996/2006). As described earlier, video clips do not immediately play once a page is loaded; however, in this case a viewer's decision whether to first view or read – or perhaps perform both simultaneously – has less impact on how the page is understood. The claims are relatively general in nature, speaking first to the student's modal competency/animation skills (a circumstance of Manner - "(in) a mode in which he is very comfortable and has skill and interest"), and then the displayed academic competencies ("has had to make meaning and bring it into a new artistic form"), suggesting a viewer will have little trouble making sense of the claims with or without viewing the video. Only one detail is singled out as evidence, a circumstance of Manner describing how key elements are revealed ("through symbols such as the Grim Reaper"). Should a viewer who first watches the video fail to notice or subsequently forget this detail, the segment/video is easily replayed by dragging the progress bar backwards or clicking the forward button. Thus, video and written text are equally dependent on the other, suggesting the decision as to whether to first view or read has a limited impact on the construed meanings.

Figure 56. Shakespearean Sonnet – Demonstration document
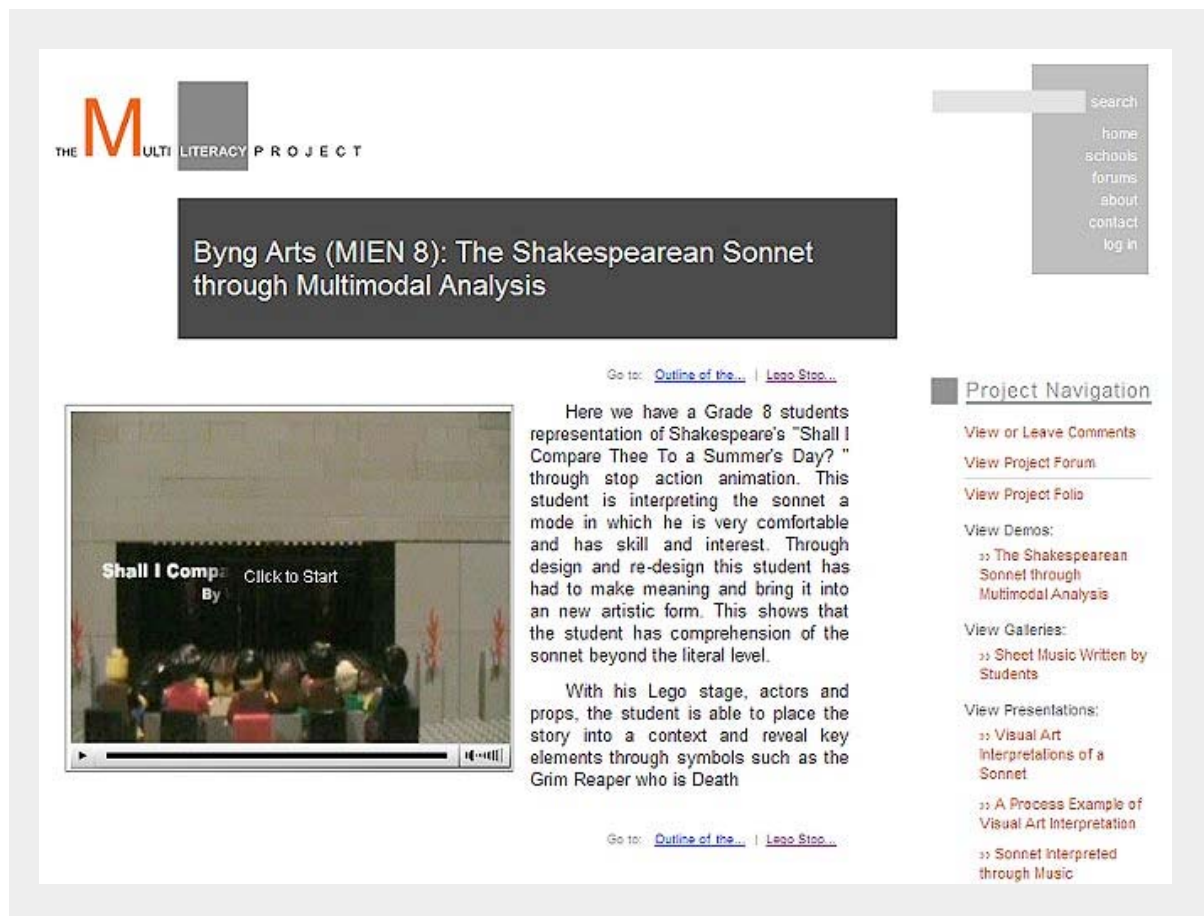
Ordering of phases is a somewhat separate issue from the phases' construed interdependency. The video originated as a stand-alone text, shared with classmates as one of a series of student presentations, and its integrity as a unit combined with stakeholders' prioritization of student work could lead to its construed independence. However, the Given-New relation between video and written text is not unimportant, and even if the video is viewed first, it is not unreasonable to expect a viewer would next turn to Ms. Hughes' words to learn more about what they have just viewed. Here they would encounter a voice of authority - a series of propositions, no trace of modality, a teacher confidently assessing a student's capacities as well as their work. Spencer "is very comfortable" and "has skill and interest" in digital animation, Ms. Hughes showing no hesitation or need to qualify her judgements. Neither does she hesitate in assessing what the student had to do to make the video, Spencer variously needing: "to make meaning;"

"(to) bring it into new artistic form;" "to place the story into context;" "to reveal key elements through symbols." Notably, the range or circumstance of the non-finite processes is not specified, although "comprehension" is post-modified by "of the sonnet beyond the literal level." As evidenced in the earlier analysis of voice, Ms. Hughes can be circumspect about what is learned, qualifying claims regarding students' mental processes, while displaying certainty about what was done and what a student can do.

> *Here we have a Grade 8 students representation of Shakespeare's "Shall I Compare Thee To a Summer's Day? " through stop action animation. This student is interpreting the sonnet a mode in which he is very comfortable and has skill and interest. Through design and re-design this student has had to make meaning and bring it into an new artistic form. This shows that the student has comprehension of the sonnet beyond the literal level. With his Lego stage, actors and props, the student is able to place the story into a context and reveal key elements through symbols such as the Grim Reaper who is Death.*

<div align="right">

Lego Stop Animation
Byng (MIEN 8) – The Shakespearean Sonnet through Multimodal Analysis
http://multiliteracies.ca/index.php/folio/viewDocument/222/9431

</div>

In commenting on Spencer and his video - and in commenting unequivocally - Ms. Hughes leaves little doubt as to her position vis-à-vis students, or a viewer. She is the knower and interpreter, offering facts that complement the experience of the video, making no assumptions regarding a viewer's ability to independently identify Spencer's capabilities and/or accomplishments. This is no fine-grained analysis, no literary assessment, but rather an offering of general comments for a general viewer. Most importantly in this analysis, they are comments which create the phases' interdependency, create a hierarchy in which the talked about is dependent on the speaker for its place within the document. Ms. Hughes authors claims regarding the meaning-making that the assignment entailed; Spencer's video is both an example and a warrant. Within this document, Ms. Hughes occupies a visible position within public discourse.

Moving up one level of the account, one finds an identical register realized in the project description (http://multiliteracies.ca/index.php/folio/viewSchoolProjects/9).

Though this description, previously analyzed in Chapter 8 (see pg. 308), now refers to students rather than specifically to Spencer, the expression of the requirements is near identical, the "task of making meaning…through their choice of art" the crux of the assignment. Art forms are now listed, indicating the space students had to work with modes and media that correspond with their talents.[106] The consistent place of diverse art forms in Ms. Hughes' texts and the specific comments on Spencer's skills and interests are the most explicit references to students' quotidian knowledge, though only knowledge and not the semiotic skills required to capitalize on this knowledge are referenced.

There are differences between the project description and "Shakespearean Sonnet," not least in its realized degree of modality. But the description also differs in that it is situated in within the time-space between the project's assignment and completion, "would" ("would demonstrate," "would be required to present;" "(would be required) to explain") realizing the impossibility of certainty in that span of time. Regardless, moving outward from the student work, the viewer continues to encounter a teacher taking on the role of knower in relation to students/student work and the viewer.

It is in the hypermodal relations of the folio page that Ms. Hughes' position within the register becomes somewhat more ambiguous. Or perhaps it is more accurate to state that ambiguity arises in relation to the accounts' components, for the folio page initially presents as a coherent text. Viewed from this level of the account, the written phases accompanying the gallery and presentation listings make clear statements about what is contained in each component, the thematic subject alternately:

- the student(s) - '"Students chose…"; "This student has composed…";

- an instance of student work - "…a composition written and performed by two students…" indicated by the demonstrative "Here;" "One of the options…"[107]

In two instances, the written text also includes an elaborating clause explaining what the project or student accomplishes. Although these texts are less patterned than

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[106] In at least one section of MIEN 8, the class also discussed using the assignment to explore a less familiar art form. The possibility was raised by a student, and supported by Ms. Hughes.

[107] There is one exception to this characterization of the component descriptions, but it appears to be a mistake, not a shift in register.

those in "Glow Fish," the pattern is still sufficient to provide a general sense of coherence to the account and its components, a coherence that is further enhanced by the project description. Overall, then, the folio page presents as a relatively unified text.

But once one begins to move through the components, it is more difficult to construe these works as anything but the students'. Each of the presentations represents a single student work, and none are annotated or include voiceovers, the unchanging presentation description at the page bottom easy to ignore. Two presentations contain musical compositions and no visual student work, sound dominating the audio player controls and the small amount of writing on the page bottom. The framing of these student works, each opening in a pop-up window or (perhaps) a new page, combined with the diverse modalities students employed in their sonnet interpretations supports a construal of the presentations as parallel texts within a shared context, countering what is communicated on the folio page.

The sole gallery contains twenty-one slides, the independent work of several students, and includes sheet music, paraphrasings of the selected sonnet, and analyses (http://multiliteracies.ca/index.php/folio/viewGallerySlideShow/222/496). Although the gallery summary appears immediately above the largest image, the top-down ordering of the page's content realizing relations consistent with Kress and van Leeuwen's Ideal-Real, images dominate the page, rendering Ms. Hughes near-invisible (1996/2006). This remains the case whether or not a viewer expands the selected image. Scrolling down to select a new image further diminishes the description's presence, for it is likely to disappear altogether except on the largest displays. All this works against construal of the gallery and/or the student work as phases of a larger text.[108]

Elements of the system are designed to explicitly counteract presentations' and galleries' potential atomization, graphics and headings working to frame the image, sound, and written phases and to connect them to additional account components. The centered black bar holding the project title dominates the top of each page, and a gray title and graphic elements mark the sub-heading "Gallery." Their place at the top of the

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[108] Perhaps the more relevant question in relation to galleries is whether each image is construed as a separate text, or whether the set is perceived as having a unified identity. No general conclusion is possible, for the text's design - the summary, the number of images in the gallery, the specific images selected – as well as the system's textual features impact what is construed by the gallery.

page, and the constancy of headings and graphics across grouped materials is an attempt to create textual unity, and these textual elements cannot be ignored. However, when presentations hold the work of one student, when a teacher's presence in demonstrations and/or galleries is limited to a relatively short written phase, and when one remembers that viewers can move from presentation/gallery to presentation/gallery without revisiting the folio page, a viewer's construal of text and the text's construal of a teacher's position is open to interpretation. This, coupled with the viewer's control over the activated text, brings issues associated with the viewer's coding orientation to the forefront.

The teacher's position

Of the three texts that have been examined, each text-as-probability radiating outward from a single student's efforts, the text originating from Spencer's video begins as the least ambiguous in regards to the teacher's position within the register of public accountability. Contributing to this clarity within "Byng Arts (MIEN 8)" and Ms. Hughes' accounts more generally is the absence of any additional complexity arising from student co-/authorship, for the complex relations of claims and warrants within and across accounts become a lesser concern. In "Byng Arts," the Interactants are limited to Ms. Hughes and viewers, and her writing offers a consistent construal of her position in relation to them and to her students. The straightforward style is exemplified in her document containing Spencer's video, an embedded student work. The student's accomplishments and demonstrated competencies are identified for the viewer, with claim(s) and warrant(s) literally and figuratively on the same page. Her written phase comments on the video, and comments combine with the document's layout to position Ms. Hughes as knower.

All this would suggest that "Byng Arts" is a model account. Yet, once a viewer leaves the document, the same issues which are manifest in Jeannie's and MJ's accounts again emerge. Presentations and the gallery can be understood as independent texts, whether or not each image/student work is construed as independent or as part of a set. Non-linguistic modes dominate each component's (presentations and gallery) semiotic space, the paucity of text, its location, and its unchanging content across page views reducing the written phases' salience. The prominence of the student work suggests the

components are more likely to be associated with students rather than Ms. Hughes, regardless of her constant authorship. Again, the components' construed independence does not lead to the accounts' failure, only to Ms. Hughes' diminished visibility, as each component becomes one parallel text among many. Though Ms. Hughes' presence dominates the folio page and is consistently realized in the written phases, it is at times marginalized by the multimodal student work. Metaphorically, the teacher becomes the Master of Ceremonies introducing those who will occupy the stage, but not the author of the night's event.

Of course, the primary argument for construing student work as independent texts is their consistent realization as such in stakeholder interviews. As already noted, the absence of students from account authorship should – and may - have mitigated against the perceived independence of student texts/work. However, it is interesting to consider an alternative possibility, that absence of student authorship may have worked against Ms. Hughes' visibility. Across levels of "Zack," realized in multiple grammatical relations, the students indicate MJ's place in relation to their work, instructing viewers to read her work first, authoring links that show connections between each other's components, and drawing upon the system affordances in ways that generate cohesion within and perhaps beyond the boundaries of any given account. The endophoric references across components further contributes to the sense of unity, the students' references working collaboratively with those authored by MJ. Patterns of experience also support the teacher's message, in "Glow Fish" and "Field Trips" as well as in "Zack," "Literacies" and "Assessment," students' reflective texts particularly effective in demonstrating learning. The repetition and revisiting of projects and individual student work from multiple points-of-view is absent from Ms. Hughes' accounts, the absence of student authors at least a partial explanation. Again, we see that the implications of each design choice are multiple, each choice interacting with the system's affordances and other design choices to impact what is construed by an activated text.

One final point raised by the text originating from Spencer's video is the extent to which the value of students' quotidian knowledge is evident to viewers. As already noted, Ms. Hughes wrote the least, her concept of account appearing to correlate most closely with stakeholders' preferences. Within her short written phases, attention is drawn to the

multiple media that the students employed, and Spencer's skill and interest in digital animation. Yet, given the limited directions, we are left questioning what information a viewer perceives being offered. Do they classify these projects as "learning Shakespeare?" Do they focus on the range of artistic media employed in the students' projects? Do they make sense of the student work by comparing it to their own studies of Shakespeare? Do they find themselves questioning what constitutes subject-area English? Or do they attend to the processes through which students made meaning of the sonnet, the complex semiotic skills in which the students are being apprenticed, and the value of the knowledge that students bring to school? Fundamental questions regarding the subject of each account/component are raised by a teacher's limited commentary on complex hypermodal texts, such questions equally relevant to the accounts authored by Jeannie, MJ, and their students. We must remember that the accounts' purpose was to demonstrate an alternative form of accountability, one which "accounted for" literacies practices not captured by existing accountability systems. In regards to the accounts' experiential functions, questions of register surface again.

Beginning with the Account

To this point, each of the examined texts-as-probabilities have taken a student text as their point of origin, the analysis working outward to relations within and across components/accounts. This approach was selected because one of the central interests of this inquiry is students' recontextualization of quotidian knowledge, and examining the accounts in relation to these three student texts provides consistency to the analysis. However, one can raise legitimate questions about this decision, for a viewer cannot reach the (potentially) dense network of linkages constituting an account without first activating a folio page. Most accounts and thus most folio pages are authored by teachers, and so it might be argued that folio pages are more legitimate points from which to begin examination of accounts, register, and teachers' position(s) within these registers.[109] At a minimum, point-of-origin has the potential to impact a viewer's construal of textual relations, perceptions as to the (in)dependence of student work and the work's relations to

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[109] Interestingly, neither the account containing Thofiq's gallery nor the account containing Helen's demonstration were authored by a teacher, although MJ authored the project description for "Zack."

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the teacher and/or their pedagogy. It takes but a brief example to demonstrate that using the folio page as the point of origin would have a limited impact on the issues that have been identified.

The folio page

Organized to support viewers' explorations of accounts, the folio page's chief purpose is to describe, classify, and organize the account's content, and thus enhance account navigation. This final function is particularly important for viewers less comfortable with the right-hand navigation menu and/or who activate demonstrations that contain no navigation links, for the folio page provides a point to which a viewer can return again and again to (re)orient themselves within the account. For this reason, a link to an account's folio page is included near the top of the right-hand menu, with the page functioning equally well if activated using the browser's back button.

Comparing accounts

Table 10 is a summary of the content of "Field Trips," "Literacies," and "Byng Arts," the first accounts listed on Admiral Seymour's, Sir Matthew Begbie's and Lord Byng's school pages. All three accounts have been referenced earlier in the inquiry, although only "Byng Arts" contains a focal student text/work. The "Listings" column represents the number of component-associated links and "Related Account" links (teacher-authored) on each folio page, and thus the number of authored links that each folio page offers.[110]

The volume of each account differs significantly, as does the number of embedded student work per component. For example, accounts authored by Jeannie and Ms. Hughes contain roughly the same number of components, but total number of student work and photos in Jeannie's account is nearly three times as high. MJ's account is different again, with nearly five times more components than Jeannie's or Ms. Hughes', but with an average number of embedded student work/photos per gallery or presentation (14) only slightly more than Ms. Hughes (11.2) and notably less than Jeannie's (22).

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[110] The total does not include links listed in the right-hand menu or the main navigation bar, as they are "outside" the authored account.

Table 10 – Content of focal teachers first accounts

	Listings	Content (embedded student work and photos) [111]	# of galleries and presentations	Average # of content items per gallery or presentation
Jeannie	7	154	7	22
MJ	66	756	54	14
Ms. Hughes	6	56	5	11.2

What is clearly evidenced by these numbers is the sheer number of selections available to a viewer at every step in their journey through an account, the links to galleries and presentations always mirrored by links in the right-hand menu, the links in the right-hand menu further supplemented by site links located in the upper right-hand corner of every page. Although a school page offers significantly fewer links, the folio pages and the pages of their associated components always offer an array of options. Every page is a hub of a network of probabilities, the viewer's selection an outcome of page design and personal interest. There is no canonical text to view.

Criteria for testing point-of-origin

The differences in these accounts are useful for illustrating that within this inquiry and in relation to analysis of texts-as-probabilities, the selection of a point-of-origin has minimal impact on the text's construal of student work as (in)dependent. For ordering to be an issue, it must be shown that using the folio page as the analytical point-of-origin may enhance construal of the account as a text, and thus enhance perceptions of the teacher as knower. If it does not, then no additional analysis is required for testing the propositions laid out in Chapter 7. To assess the potential impact of the point-of-origin to the analysis, we first must establish how a folio page's design may enhance or detract from construal of accounts as texts.

Project folios are relatively fixed pages, their spatial relations dictated by the system, as is the selection of thumbnails and linguistic text accompanying each component's listing. Authors control what goes into an account – titles, the content of the

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[111] Presentation voice-overs are also excluded, as they are not embedded student work. Rather, whether authored by teachers or students, they are reflective textual phases, analogous to the gallery and presentation summaries.

project description, the number of components, the gallery/presentation summaries, the number and type of student work – but they do not control how knowledge is organized on the folio page. Thus, if the folio page plays a critical but variable role in an account's construal of student work as (in)dependent and thus in construal of a teacher as knower within discourses of public accountability, then differences in the construed relation between teachers' and students' efforts will primarily relate to the project description and the number of components, those dimensions of the folio page that are within the author's control.[112] More simply, a folio page will have a greater probability of supporting construal of an account as a text if: a) the project description clearly positions the teacher as knower and b) an account offers fewer components.

The role of the project description is obvious, a matter of congruence between the teacher's position in the description and the desired position within registers of public discourse. An effective description functions as an umbrella for the ensuing information, in the manner that MJ's project description in "Zack" stakes claims that are warranted by the account's student-authored components. Thus the project description is a relevant variable because it instantiates relations between teachers' and students' efforts. The number of components impacts the folio page in several ways, a small number offering the following combination of benefits:

- the project description's visual salience is increased, for fewer components result in a shorter page, and a shorter page increases the probability that the description remains visible on screen whenever a folio page is viewed.
- the folio page is more prominent, because there are fewer pages within the account competing for the viewer's attention.
- navigation from the folio page is less awkward, as less scrolling is required to locate listings/links. This increases the folio page's

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[112] In order to avoid confusion, I will use the word "effort" (as in "teachers' efforts" and/or "students' efforts") as a non-specific reference to anything authored by teachers or students, including levels of accounts and/or accounts, which may or may not be construed as a text.

attractiveness as a navigation aid for those who are equally comfortable using the right-hand menu. [113]

Thus, if a project description positions the teacher as knower and if an account has relatively few components, yet analyzing the account using the folio page as the point-of-origin has limited impact on the construed (in)dependence of student work (and thus the text's register), then the point-of-origin is of limited importance to the analysis of an account and no further analysis is required.

A simple test

Ms. Hughes' account "Byng Arts" provides an ideal basis for testing whether point-of-origin impacts the construed relations between teachers' and students' efforts, because it meets both established criteria for enhancing a construal of teacher as knower. The project description positions Ms. Hughes as knower in relation to her students and the public, the description a series of assertions realized as declarative statements that address task requirements and student accomplishments. As well, the account contains a small number of components relative to those authored by Jeannie and MJ. The only question remaining is whether an analysis which originates with the folio page, one which begins with the document containing Spencer's video, yields a substantially different construal of the relation between teachers' and students' efforts.. The simple answer is no.

The analysis beginning with "Shakespearean Sonnet" revealed that within the document, Ms. Hughes is clearly a knower, commenting on Spencer's work, speaking authoritatively of Spencer's comfort with the medium. It is only when the viewer moves outside the document and returns to the folio page that Ms. Hughes' position begins to weaken. The folio page itself is the lesser issue, for the project description is consistent

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[113] There is a small possibility that a large number of components increases the value a viewer attaches to the folio page, for listings are sometimes helpful for locating and relocating a specific project and/or student, particularly when offered a significant number of choices. However, any potential strengthening of the construed dependence of student work that is related to such use is offset by the decreased salience of the project description. Further, there is some evidence that viewer's do not read from the top of the page when engaged in such tasks, suggesting any potential impact is limited (Bateman, 2008). Thus, regarding point-of-origin, we may assume that fewer components positively impacts a folio page's contribution to perceiving the teacher as knower.

with the register of "Shakespearean Sonnet" and serves to frame the account's content. However, within and across galleries and presentations, spatial relations and the dominance of the non-linguistic modes diminish Ms. Hughes' presence and support construal of student authorship and text independence. Movement between presentations and/or the gallery using the right-hand navigation menu exacerbates Ms. Hughes' diminishing presence; navigation from the folio page may mitigate but is unlikely to counter the full weight of stakeholders' interest in student work. If an activated text that begins with "Shakespearean Sonnet," moves to the folio page, and subsequently progresses to another gallery or presentation challenges Ms. Hughes' position as knower, its construal of account-as-text and Ms. Hughes' position as author at best ambiguous, it would be difficult for a text-as-probabilities originating from the folio page to communicate otherwise. An analysis which takes the document containing Spencer's video as its point-of-origin presents one of the strongest arguments for a construal of Ms. Hughes' as author and knower. A text whose arbitrary starting point is the "Byng Arts" folio page and which sequences from folio page to a presentation or gallery can only be more problematic, even though the folio page meets criteria for enhancing a teacher's position as knower. As point-of-origin does not impact the conclusions reached in the analysis of "Byng Arts," no further analysis of the accounts is necessary.

However, the relative unimportance of the page ordering (in contrast to pages activated) is relevant to the inquiry. The destabilizing space of hypermodality, a space in which viewers control the activated text, is the same space that affords teachers access to an increased range of semiotic resources. If a position within discourses of public accountability - that is, a position from which to engage in knowledge mobilization – is dependent upon access to a range of semiotic resources, then teachers are required to enter the sphere of unstable texts. This, too, must be kept in mind in assessing the propositions against teachers' efforts in recontextualization.

Testing the Propositions

As with the student texts, the point of the preceding analysis is to test the relevance of Bernstein's sociology of pedagogy, and more specifically the recontextualizing rule, to theorizing knowledge mobilization in education. The first and third proposition pertain to the accounts:

1. Recontextualization is, in part, dependent upon the range of semiotic resources afforded a category.
3. The viability of teachers' accounts of literacies practices is dependent, in part, on the development of a register in which teachers occupy a recognized position from which to recontextualize pedagogic practices and texts (including the student recontextualization processes these particularities evidence) for the purpose of public accountability.

The value of the second set of tests is that this second set is so unlike the first, the interplay of power and agency in the larger social context unlike the immediate interactions of a classroom. The space of public accountability is more frequently framed by government reports, statistics, education news stories, and academic commentary, each category of participant bringing an established voice to these instances of recontextualization. In authoring accounts for the purpose of public accountability, teachers are a disruption, a voice less typical of these spaces, attempting to capitalize on gaps created by recontextualization to position knowledge from/of practice in a new relation with the knowledge offered by other, more recognized voices. The accounts qualified success suggest the complexity of these efforts, and it is a measure of the pedagogic device's theoretical robustness if it is equally capable of explaining the dynamics of knowledge mobilization in this very different context.

The Contribution of Multimodality

From the earliest stages of the analysis, it has been evident that the affordance of a range of semiotic resources is not only desirable but essential to teachers' recontextualization efforts. The accounts' value to stakeholders lies in the ability to see and hear the work of students, to mimic the experience of walking school hallways and sitting in classrooms. These experiences, for all practical purposes, entail a hypermodal text, for digital distribution systems are the only realistic means by which teachers might recontextualize and publicly distribute such knowledge. The proposition stands as stated, further nuanced by the understanding that digital distribution systems exert their own pressures on a text's coherence.

For hypermodality is a double-edged sword, its inherent properties creating obstacles in teachers' achievement of a recognized position within discourses of public accountability. With the dissolution of a text's boundaries, the author's presence is also dissipated, for a viewer can move from student work to student work, bypassing and/or remaining otherwise unaware of the connective tissue created by a teacher. Working outwards from the three student texts/works, the books in "Glow Fish," the student demonstrations in "Zack," and the sonnet interpretations in "Byng Arts" all afford texts-as-probabilities within which the teacher is largely absent. The complications presented by hypermodality are complications of register, but they must be understood as arising, in part, from the affordance of the very semiotic resources that make recontextualization possible.

A comment needs also to be made regarding the teachers' hypermodal authoring. In relation to the student texts, multimodality was evaluated for its contribution to the students' successful recontextualization of quotidian knowledge, success a condition in the texts' selection. In relation to the teachers' accounts, success was neither a criterion for selection nor established in the analysis of the stakeholder interviews. Success is a qualified success, the accounts successful in creating knowledge flows, but their indeterminacy as texts making "success" a difficult criterion by which to evaluate the teachers' designs. Unquestionably, teachers drew upon the semiotic resources afforded by the authoring space in ways imagined and not imagined during the system's

conceptualization. The analyzed designs and modal combinations in Jeannie's, MJ's and Ms. Hughes' accounts merely exemplify, not exhaust, the diversity offered by the fifteen subject-teachers. Over time, differences also emerged within same-author accounts, as individuals began making greater use of hyperlinks, inviting readers to make specific connections within and across accounts. Among the system's affordances, perhaps audio was the most underutilized, leaving relatively unexplored the potential for teachers to maintain/increase their presence through modal combinations which present simultaneously rather than sequentially. However, a broad assessment of the accounts as recontextualizations is for another inquiry. What needs to be identified here is that the accounts' success, no matter how qualified, results from subject-teachers correctly anticipating that stakeholders would attend to the students' efforts; that is, that stakeholders would invest time engaging with representations of students and students' work that they would not invest in teachers' writing. Consistently, teachers provide an array of students' efforts, attempting to order the spatial arrangements within and across pages such that the work provides warrants for their pedagogical claims. The meanings construed by the activated texts lead to questions regarding register, agency, and the distribution of power within the recontextualizing field; however, the range of semiotic resources afforded the teachers enables them to produce hypermodal designs that attracted and held stakeholders' attention.

Recontextualization and Register

The second proposition to be tested against the teachers' accounts postulates a relation between recontextualization and register, the accounts' viability dependent not only on teachers' ability to recontextualize pedagogic practice, but also on recognition of a position from which pedagogic practices and texts can be recontextualized. From the beginning, there have been two contexts, the context in which the accounts originate, referred to throughout this chapter as the context of production, and the context in which knowledge is recontextualized and mobilized.[114] Again, the second context of interest

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[114] As noted earlier, the term context of production is used by Kress and van Leeuwen, in part, to distinguish between the semiotic resources available at the point at which the text originates, and the point at which it is viewed (2001). There is no intent here to conflate or theorize

here is the context of public accountability, not the space in which relations of an individual teacher and parent are instantiated. Recontextualizing fields are broader contexts in which open societies negotiate the purpose and aims of education; in which stakeholders wrestle in good faith with designing educational systems that serve the best interests of individuals and society; and in which the texts brought forward by stakeholders are frequently pedagogic in nature. For the subject-teachers participating in the exploratory study, the Vancouver School Board attempted to provide a position from which teachers might recontextualize pedagogic practices and texts for this larger context, the teachers relatively unfettered save for the inevitable pressure of time, and sometimes limited technological support. However, though important, the formal provisions of the district in the context of production do not necessarily reflect the accounts' construal of the teachers' position.

This distinction between the context of production and the context in which the accounts will be viewed establishes the potential for knowledge mobilization, the "from" and "to" of knowledge flows. The "from" of these accounts might variously be considered, a district or perhaps a school, but the precise organizational context of "from" appears less important than the classification of teacher and the teacher's classroom. The research design, the software system, and teachers' control over accounts all emphasize the local position over the organizational classification.[115] The context of "to," the context in which texts are activated, is theorized as the space of public accountability, a recontextualizing field which includes but is not solely defined by its pedagogic dimensions. Beyond this, despite a shared sense of the research's purpose, participants' understanding of context must be construed from their texts, and it is here the theorized and construed contexts diverge.

The texts consistently position stakeholders as Interactants, with teachers referring to themselves as "I" and to stakeholders as "you" or "we," and interview participants

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connections between this concept, and the contexts and division of labour generated by the distributive rules of the pedagogic device.

[115] The empirical research's exploratory nature no doubt contributes to the diminished importance of the originating context's organizational dimensions, for it is unlikely an established program would remain so removed from the public communication practices of school and/or district, or that it would operate through an unbranded site. Still, it is interesting to note the extent to which the research design replicates and reinforces classifications specified by the recontextualizing and evaluative rules of the pedagogic device.

referring to teachers by name. The relation holds true whether teachers or students author accounts, Thofiq offering "You can learn neat stuff" and MJ's students requesting viewers "Please go to *Literacies Language Arts,* and view Demonstration - Term two Talking, Drawing, and Writing." The relation reflects the hypermodal nature of the text, an understanding among teachers and students that a viewer will choose which pages to activate and which texts to assemble. However, it also suggests a familiar relation, a sense that the viewer is known to the author. In this, teachers accurately anticipate the priority stakeholders assign to familiar teachers, students and schools, and while the tone is not casual, the position of knower adopted by the teachers is also familiar, the manner in which learning is identified and texts displayed recognizable to a stakeholder who has visited schools. Similarly, the manner in which interview participants refer to teachers and schools by name, a Byng parent referring to "a long text by Amy Hughes" and an administrator to "the Kitchener one," presumes others around the table are equally familiar with the referent. The sense of familiarity is also evident in what is not in the accounts, what is not said about each school - its neighbourhood, students and challenges. The three schools represent highly diverse student populations; the stakeholders who participated in the group interviews knew one but rarely all of the schools. Yet such information was neither supplied nor noted for its absence, manifesting a shared sense among participants that the needed information was already known. In the forms of address, in the references to schools and teachers, and in the assumptions of shared knowledge beyond the text, the register of the accounts and participant interviews construe a context in which relations are established and familiar, teachers, parents, representatives of community organizations and administrators known to each other. In effect, to a greater or lesser degree, the research participants construe the context's tenor as falling within established category relations, all evidence suggesting that authors and viewers make sense of the context by construing new experiences through meanings built up throughout their history of personal exchanges and through meanings communicated by the structure of institutional systems (Halliday & Matthiessen, 1999).

From the analyst's vantage, other registers are available; however, this resolution of the relative ambiguity of discourses of public accountability is consistent with theoretical explanations offered by the pedagogic device, the participants' texts not only

construing but enacting relations consistent with teachers' position within education's reproductive function(s). Again we see evidence of the permeability of contextual variables, the familiarity of the interpersonal relations bleeding into the experiential in teachers' location of their knowledge (Hasan, 1999b). Within more established contexts of teacher-stakeholder interaction, a teacher's position as knower is enacted in relation to their classroom and/or students, rather than the corresponding abstracted category. Teachers are knowers in parent and teacher exchanges when discussing individual students, and are knowers in administrator and teacher exchanges when discussing their classes, knowers in fields of reproduction. Not unreasonably, teachers appear to draw on this register in which they have position and power, the register in which they talk about *their* students and *their* students' learning. Thus we see MJ discuss "Students in the class" when describing the sophisticated understanding required for "'flipping' between languages," and Ms. Hughes refer to "Grade 8 students in the Byng Art Mini-School English (MIEN 8)" when showcasing how students "demonstrate their understanding" of a Shakespearean sonnet. Within these domains, the subject-teachers position themselves as confident experts, offering stakeholders (relatively) unqualified claims regarding students' achievements. Yet only occasionally is a claim's scope broadened to suggest possibilities for students more generally, the opening to Jeannie's project description in "Field Trips" one notable example ("Real world experience is pivotal in helping students make connections, build vocabulary and conceptual understanding, and stimulate further interest."). Such far-reaching claims are the exception.

The accounts' register continues to mimic that of more familiar, localized interactions in its organization of the recontextualized practices and texts. Working outward from the student efforts, we have seen Ms. Hughes' account "Byng Art (MIEN 8) organized by assignment (analysis of a Shakespearean sonnet), and MJ's account by subject area (literacies). In fact, all Ms. Hughes accounts are organized by assignment, and all but three of MJ's (excluding student accounts) by subject area. At this level of organization, Jeannie strays furthest from public education's more prevalent classifications, the links from Thofiq's gallery extending to an account organized by pedagogic practice ("Field Trips"); however, in a subsequent account, Jeannie also draws on the familiar frame of a novel study. Perhaps not unexpectedly given the genesis of the

empirical research, assessment is a thematic topic in accounts by both MJ and Jeannie, and it is within this account MJ foregrounds Helen's use of Chinese. Yet the place of students' quotidian knowledge within the organization of the accounts, and the extent to which these students' efforts pass unremarked is equally indicative of the accounts' register. The basis on which the accounts are organized marks a continuation of the material organization of school as it is classified and organized by textbooks, curriculum and report cards, categories imposed on fields of reproduction that leave little room for acknowledging knowledge brought in, transferred, and applied. For the untrained observer, the observer for whom the richness and complexity of Thofiq's research project, Helen's demonstration and Spencer's video may not be transparent, the familiar register may further obscure what each teacher wishes to make salient; that is, may obscure that learners in these classrooms are expected, supported and encouraged to draw upon all the knowledge resources they bring to a task.

The place of the teacher as knower is central to the third proposition, which asserts that the accounts' viability is dependent, in part, on a register in which teachers occupy a recognized position from which to recontextualize pedagogic practice. The extent to which the accounts' register communicates more immediate contexts raises the first question as to the accounts' viability, forcing consideration of the understanding of public enacted by the accounts, and the implications of this understanding in regards to knowledge mobilization. Within the realm of the public, broadly defined, the activities of a classroom and/or a student are of interest for their larger implications, for what may be learned about an education system's actual and/or potential performance. The specific illuminates the general, offers potential for insights into previously unidentified challenges and/or opportunities, demonstrates ways of being, thinking and doing not previously observed and/or acknowledged. The specific offered as a specific, without reflection on its more general implications, may gain an audience among communities of parents and stakeholder organizations wishing to learn about the school or schools their children attend. This, too, is a flow of knowledge. Yet in hewing closely to a register more characteristic of a field of reproduction, in realizing categories and relations of a classroom rather than the more abstract categories and relations of the social institutions of education, the accounts' perceived value to the larger public may be diminished. The

subject matter risks diverging so significantly from the subject matter of public debate, and of educational policy that the relation between sets of knowledge passes unrecognized. In effect, in construing a context in which their power is established, in contrast to a more powerful context, the subject teachers may have removed their texts and thus themselves from the larger discourses of public accountability. The account - the text - the means by which teachers enter into the field of recontextualization fails, in part, due to register.

In that the proposition being tested hypothesizes that the accounts' viability is dependent on development of a register within which teachers occupy a recognized position from which they may recontextualize pedagogic practice and texts, the analysis thus far shows the proposition stands. To a significant extent, the accounts enact a register in which teachers hold a long-established position as knower, a register associated with exchanges between parents, teachers and schools about the activities of students and classrooms. The localized context construed by the accounts presumes viewers' interests lie with familiar students, teachers and schools, and the accounts' recontextualization of student work meets the interests and preferences described by group interview participants. It has also suggested that public or democratic accountability is itself a category realized in registers, and that public accountability may be enacted within fields of recontextualization or fields of reproduction. In that the accounts constitute as well as construe the context in which viewers engage with the accounts, the accounts' register is implicated in participants' enactment of public accountability as a practice of a field of reproduction. However, locating public accountability outside the field of recontextualization has direct implications for knowledge mobilization, a potentially negative impact on a system's ability to identify and circulate knowledge generated by teachers who work with highly diverse student populations. These are issues central to the inquiry's genesis, and one of the key bases for interest in knowledge mobilization. But before further exploring these implications, we must also address issues raised by the accounts' hypermodality, for they also have significant bearing on the realized register.

If it is the nature of the reflection on student work that is critical to an account's construal of field, and not the act of reflecting nor the student work itself, then the pattern

of claims and warrants is central to register.[116] In other words, it is not the warrant but the claim it supports which is central to the construal of context, for the claim predicts the interests of the viewer, whether such interests lie with specific students/schools or with abstract classifications associated with the purpose and aims of education systems. This is not to say that the warrant(s) is unimportant, for warrants enhance the credibility of the claim and thus the credibility of an author as knower. But the claim is the critical element in positioning a text for knowledge mobilization and thus to a teacher's position as knower, for in construing context the accounts simultaneously construe whether teachers are knowers within fields of reproduction or recontextualization. This, in turn, impacts how knowledge flows through the systems of education.

And it is from the perspective of claim and warrant that we can best observe how the inherent indeterminacy of hypermodal texts further complicates issues of register, particularly the development of a register which affords a recognized position from which teachers may recontextualize pedagogic practices and texts. As consistently evidenced in all three texts-as-probabilities, the viewer's control over the activated text has the potential to decouple claim and warrant, regardless of whether claims and warrants are contained on a single page or extend across pages, components and/or accounts. The student galleries in "Glow Fish" warrant Jeannie's claims in "Field Trips," but only if a viewer activates pages from both accounts. MJ's claims in the "Zack" project description are warranted by the student-authored components that follow, but the sophistication of Helen's digital design and the contribution of her multilingual capacities pass relatively unnoted within the account, with claims which might support the viewer's understanding of her work's semiotic complexities lying some distance away. Ms. Hughes' short, clear, direct language accompanies each (set of) student work, but the scale and position of the student work diminishes the salience of her words. Admittedly, system design and authoring choices also impact the relations of claim and warrant, and the construed independence of texts. The analysis of the folio page and gallery listings in "Glow Fish" demonstrates how the page layout simultaneously creates coherence among the

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[116] "Field" is used here to refer to Bernstein's concepts field of production, field of recontextualization and field of reproduction, the fields produced by the rules of the pedagogic device. The SFL context variable "field" is implicated in issues of register and the test of the third proposition, but is theoretically separate and distinct from Bernstein's work.

components, and realizes each as separate and distinct. In the same student-authored account, the absence of teacher-authored claims is countered by the consistent genre of the gallery descriptions and the patterns of links among the three student accounts and Jeannie's "Field Trips." Within "Zack," a) the components' endophoric references, b) the position of MJ's claims in the project description, and c) the references in "Links" to the demonstration "Literacies - Term Two" all contribute to the account's cohesion and to an understanding of teacher as knower; however, the sheer number of student components, and the complex linkages afforded the viewer detract from the students' cohesive efforts, supporting a construal of demonstration/student components as independent texts. The perceived distinctiveness of teacher and student texts is further reinforced by the absence of direct links between "Zack" and the non-"Zack" components that explain and/or stake claims related to the student work/texts. In "Byng Arts (MIEN 8)," the brevity of Ms. Hughes' component descriptions and absence of slide annotations combine with the spatial relations of image and text in galleries and presentations to diminish her presence, even though she is the sole author of the account. System design and authors' choices *are* implicated in construals of teachers and students' work as independent. However, the inherent properties of hypermodality – viewer control over the activated text, obscured textual boundaries, and decentered texts – potentially sever the intermodal relations of claim and warrant regardless of an author(s) attempts to sign relations. The decoupling alters the register of the activated text – that is, alters the teacher's position as knower – simultaneously impacting construals of teachers' position within the larger discourses of public accountability.

Though the decoupling of claim and warrant is problematic, hypermodality's more significant impact on the register of these texts-as-probabilities may be its latent potential to diminish teachers' presence. Co-authorship heightens the importance of a viewer's coding orientation, for viewers' construal of context - their opinion as to what constitutes relevant information - shapes selection of two texts, the physical (digital) text and instances of the discourses of public accountability. And "the kids' work is, is certainly what's the most interesting." From this perspective, metaphoric travels down hallways and into classrooms are seen in a new light, for the determination of where to walk and sit is made by the viewer. Accounts are transformed into experiences selected

by the viewer, stakeholders describing how "those projects that had video clips or sound clips or that kind of thing, drew me in more," and through a translator that they liked that "they see the children see, what, what's in their mind." This is not to imply that interview participants were dismissive of teachers or teachers' comments, and when probed they could and did describe how the teachers' explanations enhanced their understanding ("But having that explanation really sort of wrapped it all up, and you would go "Okay, yeah. I see what, what, I see the value in…all these different ways of teaching and ways of learning and how they all come together."). But teachers' texts and claims are not the viewers' primary interest, though claims are the meanings teachers offer viewers, the teachers' construal of the significance of student work. The preference for student work over teachers' reflective texts suggests that activated texts will contain fewer claims than teachers and/or students anticipated, rendering teachers' knowledge invisible and dissipating teachers' textual presence.

In effect, within the metaphoric space of the accounts, the teacher is no longer a gate to student work, no longer the person who gives access to the room or with whom time is scheduled. In the asynchronous conversation that is proffered and activated text, the viewer acquires new power over what they will and won't observe, turns away (at least in this case) from lengthy writing, seeks only "just little bullet" and teachers' comments "just as introduction…and to provide context." "Glow Fish," "Zack" and "Byng Arts", like many of the accounts, afford exactly what the stakeholders value most, the opportunity to engage with the student work, encountering little or no teacher commentary. In this, the stakeholders' overwhelming positive assessment of the accounts should come as no surprise. Yet, not only does this understanding of the accounts and of the construed context of the accounts suggest a failure in the mobilization of teachers' knowledge, it suggests the teachers' presence is considered largely unnecessary. The construal of public accountability evident in the stakeholder interviews is one which risks positioning teachers as suppliers of raw data which others analyze, evaluate and judge, not as recontextualizers and knowers in their own right. The unintended consequence of the hypermodal text may be decreased rather than increased recognition of the teacher's position, regardless of the perceived mobilization of knowledge.

The Third Proposition

From the outset of the analysis, the accounts' success has been ambiguous, the question not whether the accounts are successful but the nature of the success. The basis for establishing viability, on the other hand, is much clearer. Viability is hypothesized as dependent on the development of a register which affords teachers a recognized position from which pedagogic practices and texts (including the student recontextualization processes these particularities evidence) for the purpose of public accountability. The criteria for viability cannot be met by texts that offer the public greater access to student work; the criteria requires circulation of knowledge, teachers' knowledge of pedagogic practice and texts.

Two issues emerge which raise significant questions as to the accounts' viability, each of the issues intimately linked to issues of register. The first is the construed context(s) of the teachers' recontextualization efforts. In both context(s) of production and context(s) of public accountability, the texts realize a register most consistent with a field of reproduction, the accounts performing as an accepted and viable means of circulating knowledge pertaining to local schools and school contexts. However, the extent to which the accounts' interpersonal and experiential functions presume a shared knowledge and interest in the local (potentially) undermines the accounts' perceived relevance to fields of recontextualization, those locations within the institutions of education where the goals and direction of public education are debated and determined. Further, though local circulation of knowledge equips stakeholders for participation in larger public debates, the relative absence of claims asserting the general educational value of the recontextualized practices may limit the accounts' perceived relevance to discourses of public accountability. Thus, to the extent that the accounts' register construes a local context, the scope for the mobilized knowledge is reduced and the accounts' viability weakened.

In addition, if construal of a local context (a field of reproduction) negatively impacts viability, then the inherent features of hypermodality arguably amplify such impacts. Within hypermodal environments, claims are easily decoupled from their warrants. This weakens the position of teachers' proffered knowledge as claims are central to establishing relations between teachers and recontextualized pedagogic

practices. The control such environments afford viewers over the activated text also heightens the importance of the viewer's coding orientation(s), with direct implications for teachers' presence in the texts. Within the construed local context, group interview participants emphasized student work over textual phases/teachers' claims. This emphasis diminishes teachers' presence, a teacher's role no longer to circulate knowledge but to provide data for others to analyze. Though sharing student work with the public on a consistent basis would be difficult without digital distribution systems, hypermodality is a double-edged sword. Throughout the accounts, it simultaneously confounds attempts to develop a register in which teachers occupy a recognized position from which to recontextualize pedagogic practices and texts, while providing the semiotic resources that make recontextualization possible.

The construed local context, and hypermodality's amplification of the challenges which result are fundamentally issues of register, of the relations of the texts' experiential, interpersonal and textual functions in the multiple contexts in which the texts perform. The potential for instantiating flows of knowledge is diminished by the realized registers, the registers of the context of production and of the contexts in which the accounts are activated. The accounts are not a failure, in that stakeholders overwhelming assessed the accounts as valued sources of information. But a more detailed examination demonstrates that these assessments frequently construe a relatively constrained scope for the proffered information, one that does not encompass fields of recontextualization. In that the accounts' viability is diminished by their register and the teachers' position within it, the posited relation has been confirmed and the proposition stands as stated.

Agency and Creativity

It is necessary, at times, to remember that the purpose of this inquiry is to engage in a theorizing of knowledge mobilization, and that the analysis of teacher and student texts has been undertaken to test the potential of Bernstein's pedagogic device to support inquiries in this domain. In this, the inquiry has fulfilled its purpose. But, as with the student texts, the teachers' accounts offer insights into issues of agency and creativity, two points of departure for this inquiry. Together, teachers' construal of local contexts,

stakeholders' prioritizing of student work, and the complicated affordances of hypermodality suggest how teachers' position as knowledge workers may be evolving, and the implications of this evolution for educational stakeholders. Reflections on these issues are aided by a return to Bernstein's concept of recontextualization.

Revisiting the Accounts via Bernstein

A fundamental premise of Bernstein's recontextualization rule is that a discourse's delocation and subsequent relocation results in an imaginary discourse, for knowledge reconfigured for pedagogic contexts does not mirror knowledge as realized at its origins. Pedagogic discourse is thus defined not as a discourse, but as a principle for the delocation and relocation of knowledge. Relocating knowledge creates a gap, for reordering meaning creates space for new meanings, a latent potential for introducing difference. The gap exists independent of the specific context in which recontextualization is practiced; that is, independent of the practice's location in the production and reproduction of knowledge. Of the multiple locations within education in which discourses of public accountability are enacted, each is a potential location for the teachers' accounts and for the introduction of new information.

However, though knowledge may have relevance in more than one context, a text construes but one. The scope of potential knowledge flows is defined, in part, by the text's construed context, and teachers' agency by their ability to distinguish between contexts and to instantiate a text within the register of each. The teachers' comments suggest they are well aware that public accountability, like many functions of education, is enacted across multiple contexts. The discourses and associated contexts described by teachers in Chapter 2, discourses currently dominated by large-scale assessment practices and their numeric outcomes, bear only a limited resemblance to the contexts construed by many of the accounts. If teachers recognize that multiple contexts exist for their knowledge, why do the accounts generally cluster around the local, the less powerful context, though one which historically affords teachers relatively greater power? Why do they construe a context in which teachers' already have substantial ability to mobilize knowledge, rather than a context(s) in which they expressed a desire to contribute more?

Here, again, Bernstein offers insight. Recontextualization is not a neutral practice, and access to the position of knower is unequally distributed. The principled relation of instructional to regulative discourses carries forward the social distribution of power, each successive recontextualization increasingly constrained, the distribution principle according freedom and latitude to disciplines and disciplinary knowledge that is literally unthinkable to others. The recognition and realization rules governing any given context legitimate the set of meaning relations appropriate to a given context, the codes simultaneously defining the ir/relevancy and il/legitimacy of one's construal of the context. Though teachers involved in both grants recognize multiple contexts in which public accountability is performed, mastery of the corresponding realization rules is a separate matter. For teachers (at least within the examined contexts), the local dominates consciousness, and specific students, specific subjects, and specific classrooms are teachers' worlds.

Knowledge mobilization does not require a shift in a category's dominant orientation to meaning, nor is the practice of knowledge mobilization itself an act of reordering social relations, although such practices may ultimately contribute to change. However, the practice of knowledge mobilization, illustrated in the texts of students and teachers, begins with acknowledging another's context and then shifts to locating one's knowledge within an associated register, a register which construes context as it is understood by the learner. When knowledge mobilization entails a reversal of the hierarchal flows of knowledge, as it does for students and teachers whose texts have been used in this inquiry, the recognition and realization rules governing consciousness increase the challenge of approximating register, for neither the construal of context nor the necessary register(s) are congruent with one's more familiar understandings of the world. More simply, in the language of the everyday, the "where" and "how" of placing one's knowledge are more difficult when the world is less familiar. The dominant register in the examined accounts may reflect not choice but the extent of teachers' agency.

Of course, teachers are not the only participants in activating knowledge flows, and stakeholders' coding orientations are equally relevant. It is possible to understand the accounts as more than commentaries on the specific, at times requiring little more than substituting "a" for "the." But that leaves the analytical task with the viewer, positions the

viewer as analyst and the teacher as supplier of raw data, counter-equivalent to positioning teachers as knowledge workers. And there is little to suggest that stakeholders understood themselves as analysts, for the perceptual processes and metaphors evident in the stakeholders' comments would indicate that stakeholders engage not more but less reflectively with the teachers' accounts. No surprise should come from this. As previously argued, those with less power bear the weight of crafting texts requiring "minimal effort of interpretation" (Kress & van Leeuwen, 2006, p. 13), giving little reason to believe stakeholders will extrapolate the specific to the general when unsupported. Within discourses of public accountability, teachers cannot force greater efforts of understanding. Yet if teachers' agency as it relates to knowledge mobilization is limited, if teachers are unable to generate pedagogic texts that extend and gain acceptance beyond the field of reproduction, then the knowledge mobilization efforts of educational institutions cannot help but be impacted.

Knowledge Work and Semiotic Resources

Parallels between the demands on students in recontextualizing quotidian knowledge and the demands on teachers in recontextualizing pedagogic practice for public accountability are striking. In each case, the familiar must be remade for a less familiar context, the crafter of the pedagogic text accorded less power than the learner. Though voice is used to assess Bernstein's theories against the students' texts, and register used in relation to the teachers', voice and register are interwoven in each analysis, the selection reflecting the nature of the available data rather than the relevance of the concepts. It is the concepts of voice, framing and register that enable us to contrast the intersections of agency and power for their implications for knowledge mobilization, particularly as it pertains to public accountability.

Perhaps the sharpest contrast between the two settings is the emphasis given to instantiating knowledge flows across distanced contexts. Reaching beyond, drawing upon all knowledge, is a dominant feature of the focal classrooms, the subject-teachers repeatedly communicating that the classroom is not bordered by institutional knowledge. The teacher, thus positioned as learner as well as the more powerful voice, does not and cannot identify knowledge they do not hold. But they can and do request its inclusion,

according it value and prominence in the course of classroom activities. Inside and outside the classroom remain distinct contexts across which quotidian knowledge flows; the continual negotiation demanded by such practices, the attention to the distinctions between the contexts, requiring reflection on knowledge and its multiple applications. It is difference, not similarity, which is posited to expand students' capacity as agents.

In contrast, stakeholders make no demands for the outside to be brought in, for knowledge to be remade for a new purpose and a new context. In the dialectic of text and context, of a realized and construed location for knowledge, the dominant interest is in more of the same, more access to the student work and classrooms to which they already have periodic glimpses. For potentially many reasons, the teachers' actions correspond, the accounts construing a context of reproduction in which parents and teachers already share; in which community representatives already offer programs; in which administrators already navigate as they guide their schools amongst competing institutional and operational demands. Each reverts to what they know, and addresses the digital as the familiar, substituting interaction with text for interaction with teachers. There are no contexts, only a context, and knowledge is not brought into new relation. No one element in this dynamic positions teachers where they already are, positions their knowledge for a use for which it is already employed. However, there is neither push nor pull to remake knowledge for beyond the classroom, to extend beyond the field of reproduction.

In some respects, this is an oversimplification, for the accounts are not so uniform in their construal of context. Yet for exploratory research, the consistencies are notable, and it is difficult to believe that an institutionalized practice would exhibit greater variation. Though these reflections on agency are only that, the primary basis for examining accounts not permitting a more substantive argument, little in the construed contexts would impel development of capabilities which enhance agency. Absent a pull for knowledge, absent a request to "show what you know" in a context which requires knowledge to be remade, the practice of authoring on-line, multimodal accounts as an alternative form of accountability is subsumed into the everyday communication between teacher and parent, school and community.

It is worthwhile to consider how voice, register, and context intersect in relation to the examined texts, for intersections also speak to recontextualization, knowledge flows, and teachers' agency in generating such. One of the strengths of Bernstein's sociology of pedagogy is that classifications are not limited to social actors specified by the division of labour, but can include abstract categories of organizational actors, similarly specified.[117] If one considers the intersections of social and organizational actors in the contexts in which students and teachers engage in recontextualization, one finds possible explanations for how agency is exercised and potentially expanded in instantiating these texts. To a greater or lesser degree, the three focal classrooms are classifications, indicators of their internal though not external classification strength at least somewhat evident in the accounts. The dynamic of realization and construal, of text and context, brings about the classification and how it comes to be understood, the classroom an organizational actor "we." This is particularly evident in the student voice in MJ's classroom, evident in the description of classroom practices and in the cohesive relations of "Zack." Neither classification nor framing of the student voice is weakened by the new classification, the student voice a constituent but not subsumed. One may wonder at the extent to which the internal strength of the classification increases over the length of the school year, how the organizational actor "we" (the class/room) comes to enact relations with other voices (ex. younger/older students; adults; administrators) and develop its own set of internal relations. As a classification, new sets of meaning relations - new registers – may become available that are unavailable to the student voice, that are beyond the recognition and/or realization rules which it is accorded. Weakly classified externally, such classifications, if they could be demonstrated through empirical study, would have little impact on the social distribution of power. However, the internal relations may provide a basis for understanding and explaining the spaces which serve to

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[117] In using the term "organizational actor," I am not ascribing to any existing theories which take organizational actors as their object of study, nor to the definitions this would entail. Nor am I drawing upon considerations of the social space as they are articulated by authors such as Lefebvre (1991) or Tuan (1977). Rather, having established Bernstein's sociology of pedagogy and more particularly the pedagogic device, as a viable theorizing of knowledge mobilization, I am using the opportunity provided by the reflections on teachers' and students' texts to consider what has yet to be explored. "Organizational actor" is used to identify a possibility, not a fleshed out concept.

foster an increasing capacity as agent, individual agency as well as the classification's, as it relates to the mobilization of knowledge.

And that is the point for bringing students' texts into the discussion of teachers' agency, for bringing into the discussion the successful recontextualization of quotidian knowledge. It is not only that the teachers' accounts and the stakeholders' comments (largely) construe a single context, enacting an existing relation that is quotidian in its location and less reflective purpose. Rather, the contrast between students' and teachers' contexts-of-production highlights how reversing the dominant direction of knowledge flows requires more than creating an opportunity for contributing knowledge - an opportunity open to teachers and students - and more than affording a range of semiotic resources – also available to both. In this, it illustrates how attention to systems and structures, matters frequently dominating discussions of knowledge management, is insufficient for facilitating public (and likely private) knowledge mobilization, and potentially distract attention from the equally critical issue of semiotic capacity. It brings us again to the "principles of the principles of recontextualizing" (Bernstein, 1990, p. 34).

In the contexts in which students recontextualize multilingual and multimodal knowledge, the relations of the student voice not only open space for agency, but work to expand students' related capacity(ies), albeit with the explicit expectation that agency will be exercised to serve the context's purpose. The classroom registers require students to demonstrate the relevance of their knowledge, the registers' realization supporting a) students' comprehension of the principles for remaking knowledge as well as b) the shared construal of a (potentially) altered context. In contrast, the contextual ambiguity accompanying the accounts, the sometimes conflated notions of performance and public accountability to which teachers' digital efforts offer a possible alternative, provide little by way of reference. No register(s) associated with public accountability are readily available, few models exist for this context(s) in which stakeholders and teachers rarely engage. The question "relevant to what" thus comes to the fore, the teachers unsupported in understanding how pedagogic knowledge might be remade to demonstrate its relevance or in construing a field of recontextualization, unsupported in gaining access to the recognition and realization rules. And although the significance can only be hypothesized, the absence of a shared context – for the construed context cannot be

shared if the context is local – negates potential development of an organizational voice, one which might enhance teachers' agency in the mutual supports it might provide.

Before departing this reflection on teacher agency, a comment should be made on creativity, both in relation to knowledge mobilization but also for what it indicates about capacity for adaptability and change. To a greater or lesser degree, the hypermodal environment in which subject-teachers authored their accounts presented a new challenge for teachers, the range of affordances as well as the software's specific technical dimensions offering new possibilities for meaning. The particular challenges of authoring within hypermodal spaces have no easy resolution, normative practices for negotiating hypermodal texts' indeterminacy far from established. But teachers' awareness and adjustments to these challenges are evident at multiple locations throughout the texts, as evident in the weaving of Helen's "Zack" project within and across accounts. In crafting repetition, the indeterminacy of text-as-probability is acknowledged and countered, pattern replacing flow, perception replacing understanding. Claims, a more robust means for establishing a position as knower, are not forsaken; however, repetition mitigates against the inability to control chains of here-to-there, capitalizes on any path that activates two or more similar textual phases. Helen's self-presentation in "Zack" echoes across the claims in "Communicating" and MJ's projection of Helen's oral reflection in "Assessment"; adds resonance to the description of the second novel study and lessons in multimodality offered in "Term Two." Regardless of the extent to which home language is foregrounded, repetition is a creative response to the authoring context, normalizing classroom use of quotidian knowledge. From a theoretical vantage, skillful crafting of a designed experience offers the potential to alter viewer understandings without explicitly engaging the viewer in reflection.

Yet it should be remembered that perception and pattern are neither understanding nor knowledge, the necessary reflection left to the initiative of the viewer. Texts which capitalize on teachers' place in an existing local register, capitalize on teachers' practice of offering up student work – in offering up data – for public consideration, simultaneously strengthen and weaken teachers' recontextualization efforts, for knowledge may be mobilized without recognition for teachers' contribution. Recontextualizing pedagogic practice and texts as pattern and experience is evidence of

agency, and creativity may be an indicator of expanding capacity. However, it does not signal a shift in the construed context. Further, over time, texts which diminish teachers' presence may inadvertently reinforce that the location for teachers' voice is in fields of reproduction.

Public Accountability

One might ask, and quite reasonably, whether educational institutions need be concerned with expanding teachers' agency relative to the recontextualization of pedagogic practice and texts; that is, whether the issues of teacher agency on which this reflection centers are relevant to the larger interest in knowledge mobilization. While the obligation to students is clear, the responsibilities for increasing students' capacity coinciding with the larger social interests of knowledge societies, the obligation to teachers as a voice and as an employment category may be less so. Admittedly, a text's construal of a local context and local circulation of information can perform at least some of the accountability functions required of educational institutions. But one need not look far to realize the insufficiency of a localized practice, research on accountability in education as well as knowledge societies suggesting more is required. One could refer to the work of Barber and Mourshed (2007), to their conclusion "that the quality of an education system cannot exceed the quality of its teachers" (p. 16), and raise questions regarding the attractiveness of a profession – and perhaps its identification as a profession - whose members are confined to fields of reproduction. However, less complex arguments will suffice.

Stakeholders have an interest in the effective circulation of knowledge within educational systems, and teachers' agency as it relates to knowledge mobilization impacts the circulation of knowledge. The capacity of educational institutions to capitalize on existing pedagogic knowledge – that is, their capacity to efficiently and effectively disseminate and act on knowledge pertaining to such practices – goes directly to instructional quality. Given that innovations are likely to occur where change is first experienced, necessity playing no small part in innovation, and change is first experienced in classrooms, stakeholders have a genuine concern in learning whether classroom innovations are captured and effectively disseminated.

Stakeholders have an interest in the quality of the information they receive about the performance of Canada's education systems, and that is also directly linked to teachers' agency. Particularly important from the perspective of this inquiry is stakeholders' interest in the extent to which students are apprenticed in skills highly valued in information societies, of which the ability to mobilize knowledge is increasingly paramount. The information circulated to stakeholders for the purpose of public accountability must allow stakeholders to engage with institutions around such issues; must reflect on students' abilities to generate knowledge flows. As classroom knowledge mobilization is necessarily idiosyncratic, a function of students' highly diverse knowledge, a balance of general and specific is required if publicly circulated information is to account for use of students' languages, histories, experiences and practices. For such information to be circulated, teachers must be capable of taking knowledge in the classroom and transforming it into knowledge of the classroom, purposing it for public accountability and the field(s) of recontextualization.

None of this suggests that teachers must be directly involved in field(s) of recontextualization, either as individuals or through direct representation. That is a separate matter to be debated in organizations and institutions. Rather, the argument here is that within information societies, educational institutions cannot afford to waste knowledge, not professional knowledge or student knowledge gained beyond the classroom. The reason for public interest in teachers' agency is that the public has an interest in teachers' knowledge, in ensuring teachers' and students' knowledge is used. For the public to act on this interest, knowledge of classroom practices must flow across contexts, and it cannot flow if teachers are not agents of knowledge mobilization. Such mobilization of knowledge requires teachers to occupy a recognized position from which they may recontextualize pedagogic practices and texts for the purpose of public accountability.

The Teachers' Position

The capacity of Bernstein's theories to address contexts, not a context, remains one of its greatest strengths in relation to studies of knowledge mobilization. The challenges of recontextualizing knowledge, the knowledge of teachers and multilingual,

multiethnic students, consistently includes the need to recognize how the presentation of knowledge in more powerful context(s) is dis/connected from the world as they understand it; to bring knowledge into new relation(s), to realize unfamiliar registers, such that one's knowledge may gain acceptance in more powerful contexts; and/or to consciously critique how such knowledge is made and used. No single set of principles govern knowledge mobilization, for no single set of principles govern meaning. Rather, in relation to knowledge mobilization, agency is access to the "principles of the principles," a capacity to realize meaning in relation to a context, a capacity to shape context through the skillful execution of a text.

Thus the inquiry returns to issues of classification and framing, of the recognition and realization rules which govern their constitution. Whereas the three focal classrooms appear to provide the necessary support for realizing one's knowledge anew, for gaining an audience for one's knowledge within a more powerful context, the space of public accountability as construed by stakeholders and teachers yields scant evidence of such. Not software systems, not equipment, not formal organizational endorsement nor relevant knowledge are sufficient to generate flows of meaning that might fully perform as public accountability. None yield access to the principles of the principles; none yield insight into how knowledge might be made valuable beyond the local context. The principles of the pedagogic device foreground the semiotic challenges of knowledge mobilization, challenges which require more than recognition of an additional context if they are to be overcome. It is the capacity of the pedagogic device to surface such issues, illuminate the positioning of knowers, and provide possible explanations for the impediments to information flows that gives the theory such immediacy in knowledge societies.

CONCLUSION

This is an inquiry about knowledge mobilization. It is an inquiry about knowledge mobilization because knowledge mobilization is and will continue to be a highly valued social practice, a practice which therefore merits the attention of scholars concerned with the opportunities and challenges associated with educating highly diverse student populations, and with social and economic benefits flowing from their diversity. It is an inquiry about knowledge mobilization because the practices of knowledge mobilization are practices of and in semiotic systems, language being central, and the practices of knowledge mobilization cannot be addressed except with consideration of the ways in which language(s) is implicated in facilitating and/or obstructing the flow of knowledge. It is an inquiry into knowledge mobilization, in part, because education (and more particularly literacy) is increasingly used as an indicator of a nation's social and economic well-being, a competitive factor in nations' attempts to position themselves as attractive sites for intellectual and financial investment. This, in turn, has led to increasing political pressure for numbers, measures, and indicators regarding the performance of educational systems, the pressure for performance indicators at times inappropriately conflated with education's long-standing obligation to demonstrate public accountability. Thus, it is an inquiry about knowledge mobilization because children, teachers, administrators and educational policy-makers are struggling in good faith to reconcile the social privileging of knowledge mobilization practices with the realities of the systems, structures, and practices that are education in Canada, and because public sector researchers have an obligation to address matters of pressing concern.

This is an inquiry theorizing knowledge mobilization. It became a theorizing of knowledge mobilization because existing theory within language and literacy education could not adequately explain the current practice(s) of Canadian classrooms, the instantiations of flows of knowledge across the domains of students' lives. Simultaneously, the disjuncture between knowledge mobilization as it might be understood in relation to concepts of knowledge management, knowledge flows, and public accountability, and knowledge mobilization as currently practiced by education's formal accountability systems suggested a need to pause, reflect and consider how issues associated with knowledge mobilization are discursively framed. Thus, it is an inquiry

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theorizing knowledge mobilization because there is a pressing need for theoretical frameworks that support investigations of knowledge mobilization in and of the classroom.

This is an inquiry which examines the explanatory potential of Bernstein's sociology of pedagogy, and more particularly the pedagogic device, as it relates to knowledge mobilization. It examines Bernstein's theories because of their particular relevance to the questions at hand, its central interests in pedagogy, knowledge, and the ordering of consciousness. It is an inquiry which came to center on Bernstein's theories because of their capacity to explain as well as describe, Bernstein seeking to explain how pedagogic practice replicates and maintains existing distributions of power. The central role that Bernstein assigns to language and (implicitly) to an expanded range of semiotic resources is also a key consideration in its selection, for Canada's highly diverse, multilingual, multiethnic student population are at the heart of this inquiry, and their needs and potential cannot be adequately addressed without speaking to issues of language. Thus, Bernstein's sociology of pedagogy and the pedagogic device are examined because of their bearing on the object of study.

This is an inquiry into knowledge mobilization which tests Bernstein's theories against empirical data gathered under the auspices of the SSHRC grant "Alternative Accountability." It is an inquiry which proceeds to empirical tests because his work withstands an initial assessment against criteria drawn from the field of knowledge management: (a) the capacity to account for the construction of contexts and the movement of knowledge between contexts; (b) an improvement in the descriptive resources available for documenting knowledge flows; (c) the ability to address issues of power, the differential privileging of the discursive construction of knowledge, and differences in individual agency in the mobilization of knowledge; and (d) the space for genuine choice in practice and a corresponding potential for an alteration in social relations. Three propositions focusing on the multimodality and directionality of knowledge flows are then tested against two interconnected yet disparate sets of practices: (a) the students' recontextualization of quotidian knowledge; and (b) the teachers' recontextualization of pedagogic practices and texts. The failure of any one of the posited relations between recontextualization and multimodality, voice and register

have the potential to falsify the theoretical explanations offered by the pedagogic device, and thus refute the justification for its theoretical application. Thus, it is an inquiry testing Bernstein's theories against empirical data because such tests can further warrant or falsify the hypothesized capacity of Bernstein's theories to explain the success and/or failure of practices associated with knowledge mobilization.

The question which has guided much of this inquiry can be simply answered. Yes. The three propositions stand when tested against the empirical data. When tested against propositions derived from two key dimensions of knowledge mobilization, affordance of modal resources and the directionality of knowledge flows, the pedagogic device contributes to a deeper understanding of the complexities of knowledge mobilization practices in education. Yes, it adds nuance and depth to evaluations of the success of such efforts, evaluations that go beyond assessments of systems and software, or simple indicators of language use. Yes, in conjunction with social semiotic theories, it offers the capacity to examine the micro in relation to the larger social order, to see equally the possibility for change and the pressures which maintain the existing power distributions. Bernstein's theories are not a theory of everything and make no pretense of being such. However, in regards to inquiries into knowledge in and of the classroom, to inquiries into the challenges and opportunities for apprenticing multilingual, multiethnic students in the practices of knowledge mobilization, Bernstein's work, particularly the pedagogic device, provides a productive theoretical frame. And as might be expected, the tests offer potential avenues for further investigation into knowledge mobilization within education, as well as the opportunity to reflect upon the questions which framed the SSHRC grant.

Investigating Alternative Accountability

Distributing knowledge is not the same as positioning knowledge for others' use. If this was ever in doubt, the analysis of the students' but more particularly the teachers' texts demonstrate how clearly the two can diverge, the stakeholders' construal of the accounts as local information insufficient for indicating viability as it was operationalized in the SSHRC-funded study. While analysis of the complete data set could speak more effectively to the study's research questions, this inquiry highlights the following:

Democratic Accountability and Knowledge Mobilization

While the particulars of accountability debates in education are unique to their specific legislative and jurisdictional environments, the issues at their heart have much in common with those being pursued in studies of deliberative democracy, digital governance, and globalization and representation, a concern with the place of the public in relation to its institutions and their shifting influence. Bernstein's work is helpful for identifying the pedagogic dimensions associated with such practices, and the ways in which knowledge, power and agency are implicated before decision-making. There appears to be a danger in education, at least within certain accountability discourses, that matters concerning education's reproductive function subsume democratic conversations regarding education's purpose and place within society. The extent to which the accounts construe the local points to the unintended consequences of even more innovative practices, and the need to think carefully how texts' categories and relations are constructed for the public, for the texts' register shapes as well as responds to the public's actual and perceived needs.

Multilingual Learners and Knowledge Mobilization

Helen's comment "use Chinese as a display" juxtapositioned against her own and much of the additional, unanalyzed student work drawing upon home language highlights the variety of functions home languages perform within these classrooms, as well as the extent of the students' recognition of the value of their multilingualism. "As display" is neither a sufficient nor satisfactory descriptor of a home language's potential, nor is it an adequate description of the functions which Helen has it perform. Here is a nub of one pedagogic challenge associated with multilingualism in mainstream classrooms, support for students' expanding consciousness of their languages – their awareness of their knowledge as knowledge of, knowledge in and knowledge through languages (Halliday, 2007). Language as "display" has limited capacity to contribute to innovation, little to add to practices of knowledge mobilization, for these require explicit not tacit knowledge of language's value. The development and documentation of productive pedagogies that expand students' awareness and capacity to deploy their multilingual resources is an area

still requiring substantial development, and one to which further analysis of the "Alternative Accountability" data set, an analysis employing the concepts of recognition and realization rules, might contribute.

Avenues for Future Investigation

While knowledge mobilization's place as a privileged social practice, and diversity's theorized contributions to individual and societal well-being are the impetus driving this inquiry, its specific shape and texture arise from the inquiry's design as a test of Bernstein's theories. An unfortunate bi-product of the design is that it leaves little space for extending Bernstein's work, although the data and the analysis offer the potential for such. Several noteworthy areas arise from the analysis for future theorizing and investigation.

Bernstein and Knowledge Mobilization

Theorizing the reversal of the dominant direction of knowledge flows as they are mapped by the pedagogic device is perhaps the most immediate step needed for advancing this current work. Such continued development offers particular promise relative to: a) students' multilingualism, where it is the language itself as well as the knowledge it holds that must find a place in the classroom and b) fields of recontextualization, in which competing discourses with their associated practices for legitimating knowledge contest for space and preference (see below). Here Bernstein's theories are explicitly open to extension, the quotidian mapped by the pedagogic device and the possibilities and challenges of gaps and insulation already identified.

Fields and Knowledge

Knowledge mobilization is a practice of fields as well as disciplines, a distinction that has implications for classrooms but more importantly for pedagogic practice more generally. Much of the work currently drawing on Bernstein's theories takes disciplines as its object of study, elaborating upon the concepts of horizontal and vertical discourse to consider how knowledge is legitimated (see for example Christie & Martin, 2007).

However, to the extent that societal challenges demand attention from multiple areas of expertise - multiple fields as well as disciplines - focus on disciplines alone cannot illuminate how knowledge flows are instantiated, blocked and facilitated within the diverse pedagogic contexts of knowledge societies. The teachers' efforts to mobilize pedagogic knowledge for public accountability are illustrative of the strength of Bernstein's theories for inquiries in broader social domains, wherever knowledge is a central object of study.

Register and Language

In the particular debates that surround theorizing second language learning, theory and theorizing centered on linguistic forms cannot (always) accommodate the impact of power and agency on a text's communicative success, while theory and theorizing focused on communicative success cannot (always) accommodate the extent to which mastery of language confers power and agency. In the analysis of the students' texts, the conjunction of Halliday's concept of register and Bernstein's concept of voice opens avenues for simultaneous exploration of both, for discussion of the contingency of language's use in relation to context, and of the power accorded those who can deploy their linguistic resources across multiple contexts of situation. No pretence is made that the intersection of Halliday's, Hasan's and Bernstein's work can function as a theory of second language learning. However, theories opening pathways into these two sets of complementary interests cannot help but add insight into how those learning an additional language learn to mean.

Texts and Perception

The stakeholders' responses to the accounts are notable for the extent to which perceptual processes dominate, despite the non-immersive environment and relatively low level of interactivity. In addition, expectations regarding the distribution of knowledge within and across modalities, particularly the emphasis on limited linguistic text, amount to a prediction of register, an expectation that links to the processes in which stakeholders expect to engage and may influence the energy willingly invested in

drawing meaning from a text. If digital texts are indeed increasingly experienced rather than reflected upon, then theories of meaning-making derived from print-based concepts of reading risk significantly misunderstanding the meaning-making processes associated with them. Further, the stakeholders' comments would seem to suggest that authoring for internet-mediated spaces requires authoring for perception as well as (and perhaps at times instead of) authoring for reflection and understanding. In an inquiry focused on the mobilization of knowledge in diverse societies and the fostering of knowledge mobilization skills, the stakeholders' realization of perceptual processes raises significant questions regarding the design skills required for knowledge mobilization, and the privileging of those on whom such design skills are conferred.

Modality and Mobilization

The dominance of perceptual processes further speaks to the distribution of power as it relates to the pedagogic text, and the complicated business of gaining (and giving) access to associated recognition and realization rules. Authoring sophisticated texts which target perceptual as well as reflective processes requires access to an expanded range of semiotic resources, resources in the context of production as well as resources associated with digital distribution systems. Sound quality, colour depth, sampling and compression technologies, etc. associated with qualitative differences in hypermodal texts take on a heightened importance when/if perceptual differences are increasingly privileged. The capacity to critique requires a capacity to step outside the sensory experience and to examine its textual design. The digital has always been associated with notions of divide, of "soft" skills as well as "hard" technologies; the analytical skills required for evaluating and producing multi- and hypermodal texts multiply as an increasing range of processes is required to design and consume newly arranged meanings. Multi- and hypermodality are not answers to long-standing questions, but further complications to questions that remain long-standing. The teachers' accounts, the construals of local contexts and the imposing of established orders on newly offered knowledge, speak to what Bernstein's theories can help us to surface and what will continue to require our attention.

Register, perception and hypermodality; the ordering of meaning relations; classroom privileging of those whose experiences of knowing most closely resemble the experiences of the classroom; diversity and difference as sources of creativity and collective knowledge; public accountability and the need for information relevant to students' access to the complex meaning relations; the societal need to unlock all available knowledge. These are not associated with learning only what has been; they are associated with learning what can be. What the collective weight of the inquiry points towards, points toward theoretically but also practically, is the need to address the complex design skills required in knowledge-based societies; to address the semiotic technologies of meaning-making, the metalinguistic capacities and the grammars of newly and/or more readily available modes. Recontextualization of quotidian knowledge - the students' diversity, the tacit knowledge of practice - requires instantiating a text in the register of the pedagogic subject, a subject whose social position requires more of the pedagogue than the learner. To reverse the dominant flows of knowledge, it is the capacity for meaning-making, not a software system, which first and foremost must be addressed.

From the beginning, this inquiry has been positioned within a cycle of research, and the theorizing situated within a circle of potential entry points for theoretical understandings of the world. Going forward, it is important to remember that this inquiry began with the specific: that it began with students like Diana, Arun, Lily, Uriel and Julia drawing upon their linguistic and cultural knowledge to further their own and others' academic success; that it arose within classrooms such as Meredyth's, Renata's, Marissa's, and MJ's, locations in which the proposed work of the INE began; that it was furthered by the multilingual and multimodal efforts of Thofiq, Helen, Spencer and their peers; and that it was possible because teachers such as Jeannie, MJ and Amy already engage in the pedagogies as yet untheorized. The strongest argument for further exploration of knowledge mobilization in and of the classroom is the evidence of these students' and teachers' successes, and the relatively immobilized pedagogic knowledge it represents.

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APPENDIX A – GROUP INTERVIEW GUIDE

During the next hour, we are again going to discuss issues associated with literacy education. As in our last discussion, there is no right or wrong answer to your questions. During this session, we will focus more on the multimedia accounts you have viewed over the last several months and their value to you as an educational stakeholder.

1. Let us begin by returning to your definition of literacy. What is your current definition of literacy and of a literate person? Has it changed during the time since we last met? If yes, what has caused the change?

Let us turn now to the multimedia accounts that you have been viewing over the last several months.

2. Were the accounts useful to you? If yes, how were they useful?

3. Reflect on the types of information that the teachers shared in their accounts. Was there any information that was particularly useful to you? Was there any information that was of limited or no value?

4. Reflect on the organization of the accounts. What helped to make an account easy to understand? What made it more difficult?

5. Are there any accounts that stand out in your mind as being particularly useful? Which ones? What makes it/them stand out in your mind?

6. Have the accounts influenced your opinions about literacy and literacy education? In what ways?

7. How could the accounts be improved to provide you with better information?

8. In your opinion, are such accounts a productive means for communicating with parents, community members and other educational stakeholders about literacy education? Are they a worthwhile investment of the teachers' time? Why or why not?

APPENDIX B – CONSENT FORMS

CONSENT FORM – Teachers

Investigating Alternative Accountability as a Viable Measure of Expanded Notions of Literacy

Principal investigator:	Dr. Margaret Early Department of Language and Literacy Education, UBC Tel: (604) 822-5231 e-mail: margaret.early@ubc.ca
Co-investigators:	Dr. John Willinsky, Department of Language and Literacy Education, UBC Dr. Val Overgaard, Assistant Superintendent, Learning Service, VSB Diane Potts, Gurpreet Gill (Graduate Students in the Department of Language and Literacy Education).

PURPOSE

The purpose of this study is to explore the viability of teachers constructing accounts of their students' multiliterate learning that can supplement and extend traditional accountability measures. In this study, viability refers to the degree to which such accounts serve multiple stakeholder groups, including educators, parents, local community and economic leaders, and administrative and political decision-makers for whom students' literacy development and attainment are of critical interest. In other words, we wish to study whether such accounts provide useful information to teachers, parents and community members in their roles as educational stakeholders.

PROCEDURES

You have been invited to participate in this study because of the involvement of your school and work group in the earlier study "From Literacy to (multi)Literacies. If you agree to participate in the research, you agree to author multimedia accounts of your literacies practices over a period of five months. During that time, you will participate in bi-weekly meetings to reflect on your practices and the personal insights yielded by authoring such accounts. These meetings will be audio-recorded. In addition, a researcher will visit your classroom for approximately fifteen (15) hours over a five month period to gather information to support you in your reflections and to inform analysis of your multimedia accounts. The classroom observations may be audio and/or video-recorded if you desire.

CONFIDENTIALITY

The multimedia accounts you author are public documents. As such, your name will be associated with the study as a collaborator in the research. However, you will not be named in any transcripts, or in any reports or publications that arise from the project. Only the researchers named above will have access to the raw data they collect during the bi-weekly meetings and in conjunction with the classroom observations.

DURATION

If you choose to participate in the study, you will meet the interviewer on a bi-weekly basis for a period of five months, a total of approximately ten (10) hours. We anticipate you will spend an additional ten (10) hours beyond the time provided by the VSB to author accounts and meet individually with the researchers.

REFUSALS

You have the right to refuse to participate at any time. Your choice to withdraw from participation will in no way affect your employment, or your relationship with your school or school district.

DISSEMINATION OF RESEARCH

The Social Sciences and Humanities Research Council of Canada (SSHRC) has funded this study. SSHRC is a national government agency. We will share what we learn at national and international conferences and publish results in professional and research journals. Reports based on these presentations and articles will be available to all participants. Research from this study will also contribute to a graduate thesis.

INQUIRIES

We will be happy to answer any questions about the research at any time. Dr. Margaret Early, the principal investigator, may be reached at (604) 822-5231 or by email at margaret.early@ ubc.ca. Please do not hesitate to contact us.

CONCERNS

If you have any concerns about your rights or treatment as a research subject, you may contact the UBC Office of Research Services and Administration, at (604) 822-8598. .

CONSENT

Please complete the following and return it to a member of the research team.

Your signature below indicates that you have read the information provided above. You understand that your participation in this research is voluntary, and that you have freely and willingly consented to participate in this research project. Your signature also indicates that you have received a copy of this consent form for your own records. You may withdraw your consent at any time without any consequences.

[ ] I consent to participate in this study as described above.

[ ] I consent to being audio-recorded while I teach.

[ ] I consent to being video-taped while I teach.

Name (please print): _____

Signature: _____

Date: _____

<u>**CONSENT FORM – Focus Group Participation**</u>

<u>**Investigating Alternative Accountability as a Viable Measure of Expanded Notions of Literacy**</u>

Principal investigator: Dr. Margaret Early
Department of Language and Literacy Education, UBC
Tel: (604) 822-5231
e-mail: <u>margaret.early@ubc.ca</u>

Co-investigators: Dr. John Willinsky, Department of Language and Literacy Education, UBC

Dr. Val Overgaard, Assistant Superintendent, Learning Service, VSB

Diane Potts, Gurpreet Gill (Graduate Students in the Department of Language and Literacy Education).

PURPOSE

The purpose of this study is to explore the viability of teachers constructing accounts of their students' multiliterate learning that can supplement and extend traditional accountability measures. In this study, viability refers to the degree to which such accounts serve multiple stakeholder groups, including educators, parents, local community and economic leaders, and administrative and political decision-makers for whom students' literacy development and attainment are of critical interest. In other words, we wish to study whether such accounts provide useful information to teachers, parents and community members in their roles as educational stakeholders.

PROCEDURES

You have been invited to participate in this study because we are interested in your opinions about literacy education as a parent and/or community member. If you agree to participate in the research, you will participate in two focus group interviews. In the first, we will discuss your beliefs about literacy and literacy education, and your sources of information about school literacy practices. Then, over approximately five months, you will be asked to periodically visit a website to view teachers' multimodal accounts of their classroom literacies practices. At the end of the research period, you will be asked to participate in a second focus group, during which we will again discuss your beliefs about literacy education as well as ask you to evaluate the usefulness of the multimedia accounts. The focus group interviews will be audio-recorded and transcribed for data analysis.

CONFIDENTIALITY

<u>Every attempt will be made to keep your identity strictly confidential; however, confidentiality cannot be guaranteed in focus groups. You will be asked to keep confidential the names of the people in the focus group, and the comments and opinions that are expressed during the interview</u>. You will not be named in the transcripts or in any reports. Only the researchers named above will have access to the data.

DURATION

If you choose to participate in the study, you will meet the interviewer on two occasions for approximately sixty (60) to (90) minutes. As well, we anticipate that you will spend two (2) to (4) hours over five months viewing the project website.

REFUSALS

You have the right to refuse to participate at any time. Your choice to withdraw from participation will in no way affect your relationship with schools or the school district.

DISSEMINATION OF RESEARCH

The Social Sciences and Humanities Research Council of Canada (SSHRC) has funded this study. SSHRC is a national government agency. We will share what we learn at national and international conferences and publish results in professional and research journals. Reports based on these presentations and articles will be available to all participants. Research from this study will also contribute to a graduate thesis.

INQUIRIES

We will be happy to answer any questions about the research at any time. Dr. Margaret Early, the principal investigator, may be reached at (604) 822-5231 or by email at margaret.early@ ubc.ca. Please do not hesitate to contact us.

CONCERNS

If you have any concerns about your rights or treatment as a research subject, you may contact the UBC Office of Research Services and Administration, at (604) 822-8598. .

CONSENT

Please complete the following and bring it to the first focus group interview.

Your signature below indicates that you have read the information provided above. You understand that your participation in this research is voluntary, and that you have freely and willingly consented to participate in this research project. Your signature also indicates that you have received a copy of this consent form for your own records. You may withdraw your consent at any time without any consequences.

[ ] I consent to participate in this study.

Name (please print): _____

Signature: _____

Date: _____

APPENDIX C – TEACHERS' STATEMENTS

Positioning Diane in the Research

May 22, 2007

Jeannie Kerr

Diane's request to position her in the research was a bit of a surprise, but on reflection, it pretty much characterizes the type of relationship that existed between us in this research. I believe that Diane created relationships between researcher and research subjects that was based on trust, authenticity and mutuality. For me, the foundation of these characteristics developed prior to the research in a smaller project Diane was involved with called "Through this window I …". It was this experience that provided me with the trust to engage in a larger project such as this, and be willing to bring the idea of the project to the students.

In this research, Diane's approach was subject centred which provided a mutuality of learning experience and relationship. Diane brought the subject of accountability to the centre of the experience. She brought me into discussion with her, Amy and MJ around the accountability agenda. She also brought me into deeper discussion on the subject with Melody and Robyn at my school.   Diane had a lot to contribute, but she was in dialogue – not merely holding onto preconceived conclusions, or attempting to lead me down any sort of predetermined path. The subject was at the centre of this process and I felt that I had meaningful input and learned a lot from the dialogue through this type of structure. I felt we all were learning and developing through the process.

Diane was also authentic throughout the research. By authentic I mean that there was a consistency between her words and actions. Her research design and implementation reflected her stated beliefs. Diane stated that she believed dialogue was central to learning, and her research design consistently provided opportunities for meaningful dialogue between the students, teachers and researcher.   Diane said that she believed that learning happened in community; that children needed space to express their identities and bring their knowledge into dialogue with others in the learning community. In my experience with Diane in this research, she was completely consistent. Diane came into

my class and school and formed relationships with students, teachers and parents that reflected her beliefs. She was not a distanced observer, but became an integral part of our learning community over the school year. The authenticity that I sensed from Diane further developed my sense of trust that the research, which I believe is extremely important, was going to be as Diane stated it would be, and encouraged my greater involvement. I also believe that the students' and parents' recognition of Diane's authenticity led them to trust Diane and become whole-heartedly involved in the project.

Diane's mutuality and authenticity developed my trust in the research, and Diane as the researcher, but the trust was also going in both directions. I believe Diane maintained a sense of trust in me and my classroom and school community as well. She trusted that we would meaningfully engage in the process and would fulfill our commitments to her. She checked in and offered verbal support, but she trusted that we would figure out the technical aspects of the process together as a learning community. This was not a vague sense of hopeful trust that things would get done, but the fruition of establishing quality relationships that would engender our community to honour its relationship with her.

It is unusual for a researcher to request the "research subject" to position the researcher, but in the case of this research, it is a request that characterizes the type of relationships that were founded between "researcher" and "subjects". I believe Diane wants to really know what the results of her efforts will be. She is genuinely passionate about her subject and the process she undertook to get her through the project. Stating her position as a researcher would only tell her where she started. I believe Diane wants to know the result. She trusts us to tell her and honours us in this research by giving us a voice to express ourselves.

Diane Potts and the Mutiliteracy Project

@

Lord Byng Secondary

In June 2006, Diane Potts and Margaret Early met with six teachers in the Lord Byng English Department to invite them to participate in a study on 'alternative accountability'; in the end Diane worked with five teachers in our English Department: Kathy MacRae, Cindy Yeung, Richard Harris, Kim Chong-Ping and me, Amy Hughes. I had the pleasure of being selected as one of the focal point teachers, and the only secondary teacher, for Diane's research.

Being a part in Diane's research proved to be not only of value (I hope) to Diane, but of value to me; the study helped me to bring into focus what I want to achieve in my own practice as a classroom teacher, the importance of being not only accountable to the school, the parents, and the inevitable report card, but to the students I teach. My way of viewing my job as an educator changed during my involvement in the Multiliteracy Project, more specifically during year two when Diane was collecting data on teacher accountability.

Although I felt a growing shift in myself and how I viewed my own role in the classroom, Diane did not interfere with my teaching in order to bring about this change, far from it. My lessons were my lessons, my ideas were my ideas, but Diane, along with the influence of my own studies while working toward my MA in Language and Literacy Education, provided theoretical contexts within which to view my own practice. New ways to view literacy as more than merely 'print literacy'. This was invaluable to me; critical thinking and not just reading and writing not only could, but *should* be a mainstay in my classroom.

During our debrief sessions, and cups of coffee or tea Diane and I were able to discuss previous research being done in the areas of my interest. She helped me to position what I was doing in my own classroom within the greater picture of secondary English classrooms; as a result, I felt greater confidence in what I was doing, the risks I was taking in my presentation of material in alternate modes, and my willingness and desire to push my students beyond written response into demonstrating their 'knowing' and understanding in a variety of modes as well as culminating written analysis.

Diane observed a variety of my classes (such as MIEN8 [Byng Arts English 8], English 8, Enriched English 11, Creative Writing 12, and English 12), with the English 12s as a predominant focus. The students in all classes took her presence in stride and were welcoming. They were put at ease by Diane right away; it was made clear that Diane was not there to watch them, she was there to watch me. The students were very comfortable interacting with Diane, sharing their ideas with her, explaining their thinking to her when she asked them to talk about what they were doing *etc*.

Diane was another adult in the room, certainly, but I do not believe that the students saw her in the role of teacher at all. I was the teacher and Diane was somewhere between them and me; not a teacher, but not a student: an interested third party, a fly on the wall. It is fair to say that the students ceased noticing Diane; she was just 'there' when she was there and they carried on with the work at hand or the 'off task' behaviour at hand, for that matter; Diane did not interfere with their behaviours and I know that at times Diane heard things said and shared by students that I, as teacher, never would – but to the students, she wasn't there, so she became privy to their private dialogues.   I mention this because I think it exemplifies the neutral view the students had of Diane; this, I feel, allowed Diane the objective view she needed. She was present, but not considered so. She was known by the students, but ignored. She was approachable, but not approached. She was seen as a knowledgeable, learned adult, whose questions where answered in a thoughtful and respectful way, but she was not the teacher.

To the English Department members involved in the second phase of the study, although I became Diane's research subject, Diane was a font of support, knowledge and help.

The use of the Multiliteracy Project website as a venue to display student work, share teacher practice and ultimately demonstrate accountability was, I think, very important for the department. As English Department Head, I know that we don't spend enough time discussing our practice; as any educator will tell you, there simply isn't time. Diane's presence and the thrust of the Multiliteracy Project provided an invaluable framework within which the five of us could talk to and learn from each other. I saw this as particularly invaluable to our younger teachers, those newest to the profession: Richard Harris and Kim Chong-Ping. Mentorship and collaboration occurred naturally in this framework. I found myself meeting with Richard and Kim at their request to talk about teaching and lessons. For them as with me, I think a huge part of their learning in this project was their understanding the value of their teaching and assessment. I saw their inclusion in this project empower them as educators; Diane's unwavering support and situating of their work and validation of their work was a big part of this; here was a university researcher who knew a lot about what was out their in the research and she recognized the incredible value of their work.

So, Diane was also, though not intentionally perhaps, a mentor to two of the up and coming teachers in my department. I suspect that both Cindy and Kathy would share this view and feel equal value in being a part of Diane Pott's study; I do not focus on them as they are seasoned, master teachers who on some level do understand that they know their craft. That said, the discussions around practice and pedagogy that occurred among all five of us, Kathy, Richard, Cindy, Kim and me, evidenced a particular care and pride in our practice that we usually don't have time to, or don't take the time to, notice. Diane's presence forced us all into mindfulness. Her role as researcher and her presence did not change *what* we were doing as educators in our classrooms, but it did force us to think about it; only natural, I guess, since the study was on teacher accountability.

Amy E. Hughes

<u>Introduction</u>

I began with Diane's words, "…one of the things we always have to do is situate ourselves in the research context. In other words, I have to write who I think I was in relation to you, your students, and your classroom/school. In a qualitative research study, it's a requirement because you can't add someone to the context without altering the context. Now, I think it's rather presumptuous that I write about who I was, so I want to do something that I haven't seen done before. I want the three of you to write me. I don't want to give too much direction, because I don't want to unduly influence what you say. However, I want your opinions about who I am in the research to have as much weight as who I say I am. My thought is that the three of you write me and then it goes in verbatim, unless my supervisors have a question. Sound doable?" (Diane Potts, personal email December, 2007) Then I tried to imagine the process with someone else. I tried to extricate Diane from my teaching/classroom and place another person in the space created. It seemed an impossible task, as this research grew from research Diane and I had been involved with for several years, with The Multiliteracy Project (MLP). And, from our first meeting in the fall of 2003 for the MLP, our research relationship has been contiguous, rich, and multi-faceted.

As well, this research was complex. From a pragmatic perspective there were teaching/classroom observations, meetings of teachers within the subject schools, meetings of teachers between subject schools, meetings of parents, meetings of community stakeholders and then the system and the accounts on the site. I focused on a pragmatic perspective of the research; the theoretical and conceptual perspectives were no where near my range of 'doable' at this juncture. In each of these pragmatic contexts Diane was integral in multiple ways.

<u>Classroom/Teaching Observations</u>

Diane came to my class twelve times between September 2006 and February 2007, each time she observed me teaching for 40 – 80 minutes, depending on our schedules. She arrived, turned on and handed over the MP3, and when the bell rang we were on. I knew why she was there, and I was comfortable with her in my classroom. She knew how my class worked and was comfortable coming in and observing. Our co-researching/co-teaching/co-learning had been well established. With the MP3 around my

neck and Diane at the back of the room taking notes we proceeded. Even though we both knew what was to happen and why it was to happen, it was weird. It was not how our relationship had developed, or been realized in the past. Previously, our research, teaching and learning included the students in a more direct way – they had always been subjects. This time, in this section of the research, I was the focus/subject – that was weird. And in the classroom observations she was an observer, not a participant observer – that was weird. Yet, after several observations Diane, Division 15(my class) and I made the required adjustments/transitions and we got in a groove; we found a way to make it work so that is was no longer weird. By the end of the first term (December 2006) Diane was the representative of the Canadian Space Centre who Division 15 sent their letters of application to for a trip to the International Space Station, she and the student teacher in the class were co-planning a presentation about a learning event that occurred in the class, and she had made detailed observations of my teaching that moved both of our individual and our collective thinking forward. This highlights the first aspect of how Diane altered, added to, the context of my classroom as a person who accomplishes many tasks simultaneously and has an intrinsic need to give back Diane progressed from basic 'observer' to 'observer plus'. It was impossible for her not to offer her help to improve/extend the learning environment, she had to respond in kind, while also ensuring the prime objectives were being met – I was being observed, she was observing. These could be covered and other aspects could be added, once we worked it out together. She did not impose the other contexts on me or my class, she followed the lead we offered her and complimented her role of 'observer' to the newly created role I defined as 'observer plus'.

Throughout the course of the twelve observations how Diane was perceived in the classroom was a very complex tale for the students as well. There were seven students in the room who planned, executed, and presented their own research with Diane the previous year (February/March 2007). There were also other students in the class with whom Diane had worked with in previous years at Begbie, while working with other teachers in the school. And there were students in the class who had not previously met Diane at all. From the first time she came in the room to observe me there was a huge variation of who she was depending on who you called on to answer the question. So she

was many different things to many different people, which is a good way to describe her, and a second impact she had in the research, she was who she needed to be at the time she was called into need. So, although she was physically present only 12 times in the course of the research she was always there if she was needed, but never in the way. By the time the first two or three of the observations had come to fruition there was nary a person in the room who did not know who Diane was or why she was there. Again a measure of how she altered the context, she became someone the students knew and were willing to engage with; again there if needed, but not in the way.

Meetings of Teachers within my School

At my school, including myself, there were four teachers who committed: to write accounts, to meet to talk about assessment, and about our ideas and learning experiences throughout the process. Three of the teachers also hosted UBC student teachers during the first three months of the school year. Each of the teachers, and two of the student teachers, successfully created and made public at least one account on the site. Without hesitation I can say that everyone enjoyed the opportunity to work **with** Diane, to be **asked** to articulate their views on assessment and to have a place in their professional life to be **encouraged** to toss ideas around with other teachers in the school, in the district and with the wider community in general. Learning (teacher and student) occurred during the process of this research in the school and it was afforded venues for distribution, both between teachers and to the wider community. Diane opened conduits for knowledge generation and sharing in the school (the regular meetings) and between the school and the wider community (the website, the accounts and reporting out of both of these) into her research design to create benefit in the system that she was researching. She listened to what teachers had said in previous research (assessment was a bee in their bonnets) and included ways to help them realize some of their requests if they wanted to. Diane altered the context of my school by fostering success, and networks, for teachers to share their successes. For me in particular she offered an opportunity to talk about how I framed assessment in a theoretical and practical way. I was given a place to practice talking, and thinking, inside and outside, of my classroom about what was happening, inside and outside, of my classroom in teaching, learning, and assessing – if I wanted to, but only if I wanted to, as she was not about to make me do any of it.

<u>Meetings with Teachers from Other Schools</u>

As one of the three teachers being observed, from three different schools, I agreed to meetings with the other two teachers being observed. Three times we met and talked, and talked, and talked. Each time Diane recorded the conversations, as well as picked up the tab and gave the conversation focus. The first time the four of us got together we immediately began a conversation with a surprising level of trust. This comfort with each other and depth of conversation was possible because of the way Diane had positioned us in relation, in relation to the research, in relation to each other and in relation as epistemologists/co-researchers. Diane observed aspects in each of us that could be shared, co-constructed and developed, and she found ways to help each of us see how we could learn from and teach each other. For my part I feel that I was an apt and able co-participant in all of these meetings, and I will not soon forget 'tossing the napkin over my head and slinking under the table' upon realizing the depth of my abilities to understate my power of persuasion. At one dinner meeting all three teachers talked about how interesting it would be to see each others' classes. Diane listened and then a few days later offered that the research could cover costs incurred if we wanted to visit each other during teaching time, not part of the original design. I visited the other two teachers' classrooms, and one of the other teachers visited my classroom. All of these visits added value to my participation in the research, and my knowledge. Confirming Diane's listening, scheming and offering, but not doing for me, throughout the research. "You said you wanted…you can…if you organize it…" a familiar pattern of words for me, from Diane. She created a research design that allowed her to adjust it as the subjects came to new understandings, knowing/hoping that they/I would. Diane is a keen observer, an astute listener, who integrates what she is observing and hearing into what she already holds as knowledge, constantly. It is impossible to have someone with these dispositions enter into my context without having it altered. Knowing that Diane was also observing and listening in the other teachers' classrooms I recognized an opportunity to become an observer and listener in their classrooms too, through Diane, through the meetings, through the classroom visits, and through the accounts.

Meetings with Parents and in the Wider Community

I was kept informed of findings from meetings with parents and the wider community. As well, the students in my class who were writing their own accounts, and were being written about in accounts by me, were always informed when their work was highlighted and how their work had been received. Diane **always** gave credit where credit was due. At times during the course of the research it became my responsibility to relay messages to the students about a presentation or a talk she had given. The students became quite savvy in their understandings questioning me about which account or which presentation Diane used and how that lead to the comments. Two aspects of my classroom context were altered by this practice. First, the students, and I, heard how our learning and knowledge was valuable. Our ideas, our accounts were the topic of conversation at international conferences; recognized scholars wanted to know about what we were doing, in east Vancouver! We had experience with valuing and sharing our knowledge within our classroom but seldom from outside our classroom, our audience increased in size – exponentially. Second, Diane's practices of ensuring those who had shared their ideas, challenged her thinking, advanced her theorizing reinforced standards within the class, and bumped them up a notch. The ideas of citing sources and adding to knowledge also moved from within our class to a larger sphere. It was obvious that writing our accounts would move us to an audience wider than our classroom or our school as the accounts were on the world-wide-web, but in many other ways Diane brought my class, and I, to wider audiences and ensured that we were kept up to date with where our knowledge was going. That altered how we saw ourselves and the knowledge we were generating in our class and in our accounts. Which leads me how Diane's presence altered the accounts and the writing of the accounts.

Writing Accounts/Working with the System

Throughout the first term as I learned/worked out how to write accounts Diane helped me with the technical glitches I faced. As well, while I helped the students to begin to work with the system she helped me help them, and helped them help themselves. One of the students, who had participated with the testing of the system earlier in the year, wrote directions for others to use when beginning with the system. Diane supported this student write these instructions – as a peer helps a peer, or an

employer helps an employee. For the first account I wrote Diane stayed with me in the ML office while I organized my thoughts and committed my first words to the screen. She was always at the other end of the email when either the students or I had problems we could not figure on our own. That said, my laptop, and its personal idiosyncrasies, tried her patience at times. Together Diane, Division 15, and I worked through problems and ideas. We were the first to get going with the system and with writing accounts, and in doing so had some ground to break. Diane never solved our problems for us nor did she give us ideas, instead she supported us so we could sort out/develop our own solutions, (unless of course the problems were outside of our range of solvability) and could realize/imagine our own ideas. That was a very important feature of Diane in the context of the research, she helped us (me and the students) build sustainability in our abilities to continue with what we were learning, she spoke to us as intelligent equals – we were a team working together – we helped her figure things out, and vice-a-versa. Having the teachers and the students in the research positioned as knowledgeable and able was important for Diane. She showed me how strongly she held this belief with the care, the depth of regard she used with her words, and in her actions throughout the research. The students in my class and I felt the honour of her care and recognized the depth of its implications, these feelings altered the context in my classroom in a very positive manner.

As well, there were other teachers and other classes in the school participating in the research (writing on the site, learning to use the system), as I have previously stated. I assumed an added role in the school of helping the others to get up and running. And as matter of how I work with my class, and how Diane worked with me and my class, Division 15 accepted an added role of helping the other students and teachers to get up and running as well. This would be another impact of Diane in the research, my class and I were positioned to recognize our knowledge development and be able to sustain ourselves, and in doing so we were compelled to share our knowledge, help others to move forward with us, and to learn from/with them.

Conclusions

Diane came to my class and observed as any good researcher should. She came in unobtrusively and altered the learning environment by adding to it in collaboration with me and the students. In the context of my teaching/classroom she is/was a person who found ways to give back in kind what she received in data. Diane was also whatever anyone needed her to be while observing in the classroom, as she shared a wide range of comfort levels with the students in the class when the research began and built them as the research proceeded.

Diane fostered successes, and networks, for teachers to share their successes. She offered the teachers at my school an opportunity to talk about how they framed assessment in a theoretical and practical way. This was a welcome addition to my school's milieu.

Diane designed research that adjusted to the learning/imagination of the subjects. She challenged me, as a subject, to create my participation level, while simultaneously feeding me opportunities to learn with the other subjects. Diane never told me what to do, but she offered me opportunities to do for myself. This highlighted for me how as a teacher seldom am I framed, nor had I framed myself, as an epistemologist, and hopefully has altered how I continue to move through the world.

This idea, being recognized as an epistemologist, extended to how my students framed themselves after hearing of how their learning was represented and received at international conferences. They know they are smart – look out world – thanks Diane. What the students and I, (along with all of the other students and teachers) created on the system is amazing[118]! We were able to do this because we are amazing, because what we do is amazing and because we had an amazing person, in Diane, to work with. None of us could have done it alone, nor could any of us gone as far as we did without the others' involvement – everyone was integral. That is how Diane altered the context of the environment. And as a testament to the synergies created in this research dynamic our, (Division 15, Diane and I), work on the system continued to build and develop the

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[118]To fully describe/define 'amazing' would take several doctoral theses. The quality and quantity of work displayed in the accounts created in seven short months is beyond the scope of this little appendix of 'who Diane was in the research'. I acknowledge I should be more precise with my definition, this time I am taking the easy way out – please see multiliteracies.ca, Alternative Assessment.

following year, and probably will for some time into the future in ways no one will be able to fully measure.

I am sure that any words I choose to write about who Diane is could never hold as much weight as who she is in the research, which is the challenge she set for me. Any attempt to hold Diane in words is a mistake, as the words will always fall short of the person[119]. She created an intricate methodology for her data collection that wove together her strongly-held personal values, turned the opportunity to work with people into a situation to extend and construct knowledge together and improved learning situations in general in at least three classrooms through the thoughtful, caring and professional manner in which she comported herself. Those are each worthy enterprises individually and more so in combination; yet, they were only part of an even more complex research design which hopefully will stand and be recognized as an exemplar for others to follow in the future.

Finally, I suspect if I asked Diane to tell me what she did I bet, dollars to donuts, that she would say, "I did what was required, a given, not an exception." And I think that is who Diane is, and was, in the context of the research she invited me to participate in with her. Although, 'if I am all wet', I am sure Diane will let me know.

MJ Moran
March 2008

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[119] Even as I type this sentence three more points I'd like to make have come to me.

APPENDIX D– GROUP INTERVIEW PRELIMINARY CODING GUIDE

Case Codes/Attributes			
Participant Status	Parent – Elementary	1-1	
	Parent – Secondary	1-2	
	Community Organization	1-3	
	Administrator – School-based	1-4	
	Administrator - Other	1-5	
Additional Participant Status	Parent	2-1	
	Professional Association	2-2	
	Educator	2-3	
Translated		3	
Child in Account		4	
Context/Text			
Audience	Community	A	
	Community - Individual	B	
	Parents	C	
	Students – Self	D	
	Students – Other	E	
	Teachers	F	

Process	Celebrate	A	
	Inform	B	
	Instruct	C	
	Model	D	
	Reflect	E	
	Sample	F	

Account Representation			
Subject	Curriculum	A	
	Education System	B	
	Pedagogy	C	
	School	D	
	School District	E	
	Student	F	
	Teachers	G	
Goal	Academic success	A	
	Citizenship	B	
	Creative expression	C	
	Knowledge	D	
	Motivation to learn	E	
	Self-management	F	
	Social Responsibility	G	

Account Evaluation			
Textual			
Modalities	Linguistic	A	
	Oral	B	
	Visual	C	
Text Type	Analysis	A	
	Instruction	B	
	Narrative	C	
Data Sets	Complete	A	
	Exemplars	B	
	Representative Range	C	
Intermodal Relations	Enhance	A	
	Extend	B	
	Elaborate	C	
Interactions from Text			
Impact	Conversation with child	A	
	Conversation with others	B	
	In the classroom	C	
	Understanding of child	D	
	Understanding of classroom	E	
	Understanding of representation	F	

Concerns	Ability to compare	A	
	Congruency with practice	B	
	Marketing	C	
	Support	D	
	Teacher time	E	

UBC The University of British Columbia
Office of Research Services and Administration
Behavioural Research Ethics Board

Certificate of Approval

PRINCIPAL INVESTIGATOR	DEPARTMENT	NUMBER
Early, M.M.	Language and Literacy Educ	B06-0692

INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT

UBC Campus , Vancouver School Board,

CO-INVESTIGATORS

Gill, Gurpreet, Language and Literacy Educ; Potts, Diane, Language and Literacy Educ

SPONSORING AGENCIES

Social Sciences & Humanities Research Council

TITLE

Investigating Alternative Accountability as a Viable Measure of Expanded Notions of Literacy

APPROVAL DATE	TERM (YEARS)	DOCUMENTS INCLUDED IN THIS APPROVAL
OCT 0 5 2006	1	Sept. 26, 2006, Cover letter / Consent form / Aug. 24, 2006, Questionnaires

CERTIFICATION

The application for ethical review of the above-named project has been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.

Approved on behalf of the Behavioural Research Ethics Board
by one of the following:
Dr. Peter Suedfeld, Chair,
Dr. Jim Rupert, Associate Chair
Dr. Arminee Kazanjian, Associate Chair
Dr. M. Judith Lynam, Associate Chair

This Certificate of Approval is valid for the above term provided there is no change in the experimental procedures

Certificate of Approval

PRINCIPAL INVESTIGATOR	DEPARTMENT	NUMBER
Early, M.M.	Language and Literacy Educ	**B06-0797**

INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT

UBC Campus , Vancouver School Board,

CO-INVESTIGATORS:

Gill, Gurpreet, Language and Literacy Educ; Potts, Diane, Language and Literacy Educ

SPONSORING AGENCIES

Social Sciences & Humanities Research Council

TITLE :

Investigating Alternative Accountability as a Viable Measure of Expanded Notions of Literacy (Survey)

APPROVAL DATE	TERM (YEARS)	DOCUMENTS INCLUDED IN THIS APPROVAL:
OCT 1 1 2006	1	Sept. 26, 2006, Cover letter / Aug. 25, 2006, Questionnaires

CERTIFICATION:

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May 30, 2006

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Dear Margaret and Diane,

Thank you for your research proposal regarding "Investigating Alternative Accountability of Expanded Notions of Literacies." On behalf of the VSB Research Committee, please accept this letter as approval for you to complete your research in Vancouver schools. You have permission to contact teachers, parents and students in Vancouver schools. We request that you make your initial contact with the principal of the school to inform them of your study. Please note that teachers and administrators are very busy with many obligations and that schools have the right of refusal to participate in any research studies. Also, the Vancouver School District does not find subjects for researchers.

The VSB Research Committee would be very interested in learning of your results and its implications for students. When your research is completed please send us an abstract of the results.

Thank you for focusing your work within the Vancouver School District. I wish you the best of luck as you proceed with your inquiry.

Sincerely,