Beyond Rhetorics?

“Visual semiotics is one of the really important directions we have to take [as English teachers].”

Lindsay Williams,
Head of English Dept,
Park Ridge State Secondary School

“Once you build up resources [for teaching a unit of study within a particular curriculum] you can change little things, but because it’s such a big change [the incorporation of ICTs] you really have to rethink the whole unit structure, I think. So it’s really hard.”

Belinda Benner,
English teacher,
Park Ridge State Secondary School

“The enclosed character of schooling may limit the influence of outside practice on school-based learning.”

Bigum, Lankshear et al., 1997

These are my texts for today—perhaps for all of us today. They introduce my themes: how a technological saturated environment brings new literacy practices; how these might reshape literacy teaching and learning—or how the technology that is a school might accommodate the new to the known. And what we might need to take into account as we attempt to “improve” literacy teaching for literacy learning in these post-print times.

My thinking about these matters has emerged from some research I undertook to follow up some of the unfinished business of Digital Rhetorics. That is part of what’s implied in my title, “Beyond the Rhetoric?” But the question mark also suggests that there may be no getting beyond the rhetoric, if by that word “rhetoric” we understand the (ideological) discourses about information and communication technologies (ICTs), discourses that shape literacy teachers’ sense of themselves as professionals and their professional practice.
In need to give first a brief explanation of what I understand by the term discourse. Poststructuralist and sociolinguistic writers (Foucault 1972, 1980; Macdonell 1986; Gee 1990; Fairclough 1992, Lemke 1995; Weedon 1987) argue that the ways of talking which are characteristic of a social or cultural group have bearing on more than just the language dimensions of people’s lives. Particular uses of language do not arise just out of an ideology or social practice but help to constitute it. Thus people’s thinking (both their ideologies and their argumentation), their social actions and attitudes and even their very sense of self are shaped by discourses. In the context of the research I will be reporting on today, an example of an ideology would be an instrumentalist and utopian belief about the positive effects of ICTs on information management, instruction in schools, opportunities for employment of a skilled population and ultimately the health of the national economy. Such an optimistic set of beliefs may inhabit a number of discourses—such as that found in educational policy documents directed at schools systems and managers, or in promotional material addressed to parents. To the extent that teachers come to take up such discourses—to talk, for instance, about the “knowledge revolution”—they also take on such ideologies. This has effects on their practice and subjectivity as teachers. In this sense ideologies are discourses are practices.

In my research the ideological and discursive dimensions of teachers’ developing practice around ICTs was a specific focus of attention, since it significantly affects the uptake of those ICTs.

The influence of those ideologies and discourses are why I believe we may need to abandon any simple rhetoric about “improving” literacy learning, if by that is meant bringing about a simple cumulative improvement of standards of achievement. Policy makers, public and media often suggest such improvement can be achieved through wheeling up the latest and shiniest technology, whether this be a piece of hardware or software, or a new technique of intervening in the learning of the “wetware”. Instead, I believe we need to be alert to the complexity of the interactions among teachers, students, classrooms, curricula, schools and ICTs, and we need to identify what encourages stasis or dynamic renegotiation among these agents or “actors” (I include the non-human as well as the human in this term “actor”). That, at least, has been the lesson I have taken from my research.

At this point, let me very briefly introduce that research. In all our field work the Digital Rhetorics team found no instances of a consistent critical literacy approach to ICTs. Therefore, to round out the picture for the Digital Rhetorics report I interviewed Lindsay Williams, the Head of English at Park Ridge State Secondary School. (See “Technology in a Critical Literacy Curriculum”, Bigum, Lankshear, et al., 1997, Vol. 3, pp. 49-54.). I have worked with Lindsay and his staff over several years as he has developed a critical literacy curriculum. Lindsay is familiar with the work of Lankshear and others on critical literacy and ICTs, and we need to identify what encourages stasis or dynamic renegotiation among these agents or “actors” (I include the non-human as well as the human in this term “actor”). That, at least, has been the lesson I have taken from my research.

Even realistic curriculum plans are likely to undergo unforeseen modifications, as teachers’ current beliefs, values and practices about literacy and ICTs condition the forms any innovations actually take. Hence two of my research aims, which I will discuss today, were:

1. to trace informing ideologies and discourses at work in the teachers’ reflections on their developing practice around ICTs; and
2. to identify perceived changes in the teachers’ practices relating to curriculum development and pedagogy attributable to ICTs.

The focus in the first aim on discourses was useful; but it will not do to focus on this as disembodied language or “pure” thought. Hence my second, related, aim, with its focus on practice. It is my belief that we need to see discourses as part of an endlessly negotiated ensemble of institutions and practices, bits and bytes, space and time, flesh and wires, timetabling and down-time—all the elements that work together, each influencing the others.

First, however, I need to set my research in the context of *Digital Rhetorics*, since I will be taking up some of the key concepts set out there.

1. Digital Rhetorics: Literacies and Technologies in Education: Current Practices and Future Directions

I do not have time today to go into any detail about this national project. (If you want more, see the Project Report at <http://www-business.cowan.edu.au/rhetorics/pdf_DL.htm>.)

1.1 The project’s conceptual framework: a brief overview

_Literacy_

Following much recent theory, we understand literacy, technology and learning as sociocultural practices. Literacy, for a start, cannot be understood as “autonomous”, an all-purpose, one-size-fits-all set of skills for encoding and decoding. Rather, it is a group of literacies, and each kind of literacy develops peculiar forms and uses within particular social practices and cultural communities. And now, in a digitised world, literacy can no longer be defined exclusively in linguistic terms, nor as information stably located in a fixed, bounded text. And as I’ve already suggested, in such social practice the literacy “bits” cannot be separated from the talk, inter/action, values, attitudes, beliefs, knowledge, objects, tools and spaces within which the reading and writing take on their meaning. All of these elements are involved in using language “like a native”.

Learning literacy, like learning technology, ideally involves three dimensions (what we call the 3D model):

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<tr>
<th><strong>Operational</strong></th>
<th><strong>Cultural</strong></th>
<th><strong>Critical</strong></th>
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<tr>
<td>learning the language, learning to operate the computer</td>
<td>becoming competent within the meaning system</td>
<td>going beyond socialisation to critique and transformation through active production of text</td>
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In practice, all of these need to be attended to, more or less at the same time; no one of them takes priority.
Later I will suggest that there are supplementary ways of understanding this triad, by mapping it onto two other, related categories that emerged from my investigations into informing discourses:

- the roles of teachers, students and ICTs in the complex and dynamic networks of practice that are classrooms;
- first, second and third level effects in the introduction of ICTs into literacy classrooms.

**Technology**

As noted, technology too is a sociocultural practice, not just a tool, or a resource, or a body of technical knowledge. Computers therefore cannot ultimately be separated from the interactions and practices which encompass them. In practice, all the components exercise an influence on the others.

We developed the idea of ICTs as simultaneously a resource, and a context for getting things done. This is linked with what Sproull and Kiesler (1991: 1-17) call first and second level effects. First level effects are planned or anticipated benefits which follow from implementing ICTs as a resource. In much policy discourse, for instance, it is claimed that ICTs in classrooms will enable students to become self-paced, independent learners. Second level effects relate to context: they are “changes in the environments of practice, and in the practices themselves, which are contingent upon actually using the technologies” (Bigum, Lankshear et al., 1997, Vol. 1, p. 29). These second level effects cannot be predicted, because the introduction of ICTs affects the social circumstances within which they are used, and hence the ways people talk, think and act around them.

I have inserted a third level too:

<table>
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<th>First Level Effects</th>
<th>Second Level Effects</th>
<th>Third Level Effects</th>
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<tr>
<td>ICTs as (inert) resource</td>
<td>... as conditioning context</td>
<td>... as transformative agent</td>
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... because this has enabled me to identify more clearly what was going on in my site, by reference to Actor-Network Theory (e.g., Bigum, Green, Fitzclarence and Kenway, 1993; Latour, 1994; Law, 1992; Law and Hassard, 1999). We will follow the implications of this theory in my account of my investigations.

By itself this theory will not help us understand what is going on in cases when little if anything seems to change after computers are set up in classrooms. In such instances of course the ICTs have been “schooled” or “domesticated” (Cuban, 1986; Hodas, 1996)—and schools are a most powerful set of social technologies themselves: the tools and techniques for getting things done socially and culturally: not only transmitting knowledge but also thereby forming individuals and groups as productive social beings. We will see this at work in my research.

**Learning**

This brings us to the third of our terms for conceptual analysis: learning. As before, we think it can only be understood as embedded within forms of social and cultural practice. Those embeddings are not all alike: there is often a vast difference between “school situatedness” and
other situations of literate and technologised practice. The *Digital Rhetorics* team argued that schools are in many ways a set of “spaces of enclosure” (Bigum, Lankshear et al., 1997, Vol. 1, p. 43): nested Chinese boxes of school site, curriculum, classroom and book. We suggested that “the enclosed character of schooling may limit the influence of outside practice on school-based learning” (Bigum, Lankshear et al., 1997, Vol. 1, p. 44). Indeed, the ensembles that produce the classroom and what goes on within it may be designed to minimise such turbulence from without.

So: what happened to these theoretical conceptions when we went into the field?
1.2 Site studies: themes and findings, patterns and principles

The site studies are published in full in the report, so here I will just mention the three broad patterns we identified across our data. Later I will consider their relevance to my research.

**Complexity**
Classrooms have to organise themselves around the interactions between their various human and non-human components. Add or change one of these components (such as a networked computer), and the effect is compound: it rearranges the other interactions and may introduce new ones: roles and relationships, patterns of work, allocations of space and time and so on. This can be exhilarating or unsettling (or both!) for teachers.

**Fragility**
This is bound up with complexity: effective self-organising systems depend on all the components working together in a good synergy. In classrooms, the technical aspects of fragility often loom large; but there is also the fragility that results from depending on one person’s expertise or understanding of how to integrate ICTs appropriately and effectively into learning activities. And there is the fragility of possible funding cuts.

**Dis/continuity**
Students may learn in a computing-rich environment in one year, and hardly put hand to mouse in the next. Or there may be discontinuities between one subject area and another. Or there may be gaps among the kinds of applications taught: multimedia text, information, programming and games, stand-alone and inter/networked).

This broader context of theory and research situates my findings from the Park Ridge introduction of ICTs into the critical literacy curriculum, to which I now turn.

2. ICTs and Critical Literacy Implementation—Governing Institutions

2.1 Background and rationale

Park Ridge State High School is in a low to middle socioeconomic area and many of the students are alienated from school. The critical literacy program aims to raise these students’ critical consciousness around text and society, while also ensuring that they are competent in the genres that matter in public life. It tries to link their learning with out-of-school literacies and contexts.

(By “critical literacy” I mean a belief that all users of language aim to persuade their hearers or readers; and all texts offer a particular angle on society and human interactions. Moreover, different groups in society have different access to power, status and wealth; this depends largely on the ways they and their worlds are described and defined through language and the values that are promoted by these means. So the work of critical literacy is to investigate how those forms of knowledge, and the power they bring, are created in language and taken up by those who use such texts. It asks how language might be put to different, more equitable uses, and how texts might be (re)created that would tell a different story of other possibilities in a more just world.)
When Lindsay discussed with me his plans to insert ICTs into the critical literacy curriculum in Years 8-12, he focused on radically rethinking whole units of study at a time, in order to integrate the ICTs purposefully and centrally in the learning activities and assessment items. The nature of the planned curriculum changes hinged on his awareness that design principles and designed products ... will need to become more central to English curriculum than in the past, because with multimedia technologies “if you try and communicate clearly then you have to think clearly about the design”.... Language and technology, like words and pictures, are in Lindsay’s view more than merely complementary.

(Bigum, Lankshear, et al., 1997, Vol 3, p. 51)

Thus digitised, multimedia design, as well as the content that is inseparable from it, would be subject to critique in this curriculum.

By mid-1998 the computers and a range of software were in place in classrooms and laboratories. The ICTs comprised

- one networked computer in each of five staffrooms
- two networked computers in each of the main seven English classrooms
- twelve networked computers in a mini-lab
- a scanner and networked printer in the lab
- a digital camera
- ten laptops
- ten networked computers in the resource centre
- two multi-media projectors.

Through this hardware, access to the internet and a wide variety of software was available from both classrooms and staffrooms. In addition, teachers had the ability to send and receive e-mail.

During 1998 the professional development of the teachers at the school began. An English Faculty Technology Committee had developed a professional development program based on a scan of the teachers’ current computer skills. Issues and topics for whole faculty professional development were generated and teachers developed an individual professional development plan. Assistance towards this was provided by the following:

- opportunities for external professional development
- in-school workshops
- various support materials (e.g. training manuals)
- $250 allotted to each teacher for individual professional development in the mode and time of their choosing
- mentoring (by other teachers, HOD and adjunct staff)
- joint planning of specific units incorporating ICTs.

During 1998 the approach to teachers’ development was deliberately flexible, to give teachers the opportunity to become familiar with both the software and hardware. But the critical literacy dimension was not neglected. The more formal after-school workshops combined hands-on operational learning with reflections about how the cultural and ideological are integrated with the text and the technological medium. Lindsay also circulated articles, engaged in informal talk with fellow teachers, offered resources and practical teaching
strategies, and used these opportunities to challenge dubious “commonsense” notions about ICTs and their role in literacy and learning.

2.2 The research

Three teachers volunteered to participate in the study. Simon, Bettina and Gwen have various levels of expertise and confidence around ICTs, and various depths of understanding of critical literacy.

The teachers may be categorised as follows, according to their relative knowledge of ICTs and of critical literacy, based on self-reports (from a Technology Competencies scan) and on Lindsay’s professional knowledge:

<table>
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<tr>
<th>ICTs</th>
<th>Critical Literacy</th>
<th>Teaching Experience</th>
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<tr>
<td><em>high knowledge</em></td>
<td><em>high knowledge</em></td>
<td><em>very experienced</em></td>
</tr>
<tr>
<td>Gwen</td>
<td>Lindsay</td>
<td>Lindsay</td>
</tr>
<tr>
<td></td>
<td>Simon</td>
<td>Simon</td>
</tr>
<tr>
<td><em>medium knowledge</em></td>
<td><em>medium knowledge</em></td>
<td><em>somewhat experienced</em></td>
</tr>
<tr>
<td>Bettina</td>
<td>Bettina</td>
<td>Bettina</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gwen</td>
</tr>
<tr>
<td><em>low knowledge</em></td>
<td><em>low knowledge</em></td>
<td><em>inexperienced</em></td>
</tr>
<tr>
<td>Simon</td>
<td>Gwen</td>
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The teachers were interviewed about their conceptions of ICTs, literacy, schooling, and society, they discussed their curriculum planning as they integrated technologies into a unit of study, and they reported on the outcome of its implementation. I interviewed Lindsay too during those phases, took part in inservice sessions and had informal conversation with the teachers.

2.3 Informing discourses around ICTs, literacies and learning:

discursively constituted roles for teachers and students, classroom and technologies

In this section I describe those ideological discourses as they emerged from the interviews, as • testimony based on questions that explicitly invited discussion of the participants’ ideologies, or • testimony where ideologies surface most patently (even when the speaker does not seem to be cognisant of this).

I then analyse them according to the concepts I have introduced so far, relating to first, second and third level effects, and actor-networks. This will eventually lead us to reconsider those dimensions of complexity, fragility and dis/continuity.
2.3.1 Mechanistic metaphors: ICTs as inert resource

Metaphors and analogies can reveal a lot about beliefs and values. Simon, Gwen and Bettina drew on things mechanical for their comparisons: a tool to use, a tap to turn on, a machine like the Gutenberg press. In these analogies the technology is seen as an inert resource—that is, as having first level effects. It is not seen primarily as a context. As a conduit (a tap, a press) which is distinct from its users, it apparently changes neither the content nor the form of information nor the users themselves. Information is “goods” that come to us from elsewhere, not stuff we make or manipulate ourselves—or stuff that makes us either.

Such beliefs are likely to inform the practices that teachers set up in their classrooms around ICTs—and may be in tension with other ways of thinking and acting around them. Indeed, this conception of ICTs as inert resource cannot prepare the teachers for the role of ICTs in their classroom assemblages as an actor or agent. (One might speculate that this conception could derive from a desire, however unconscious, for the domestication of the technology: that is, for its assimilation to the present role of the teacher and relationship with students and information.)

When the teachers spoke of their teaching practice, that same view often emerged, of ICTs as an inert resource for accessing information or for the presentation of text. It was mainly in Lindsay’s talk that there was a focus on a changing world of technologised literacy practice. His image, for instance, was of

“... a more multi-dimensional world, where it’s not just a case of walking down streets or turning corners, it’s a case of being able to drop down into the sewers [underground tunnels] and have a look at what’s underneath and also being able to go up into the sky and look at things from above, or go through the sort of worm hole that takes you somewhere completely and utterly unexpected.”

Here the ICTs provide a context rather than a resource: that is, as a second level effect. More than that, perhaps, the ICTs could even be seen as transformative in a utopian sci-fi mode—what I call third level effects. In Lindsay’s view the technologies lead to a different way of being in a differently multi-dimensional world, and a different way of exploring multilinear text. Elsewhere Lindsay talked of ICTs as enabling us “to develop a much more lateral way of thinking and being able to think more imaginatively about text and about construction of meaning.” It is a more obviously contextual and mutually informing, even transformative, view of ICTs, I think, than we get in those other mechanical images.

2.3.2 Most valued learning in English

Lindsay and Simon have a developed understanding of critical literacy as the end point of education, and regard functional literacy as a necessary adjunct skill to be developed in students. Bettina echoes something of this critical literacy when she identifies her role as making students become

“more aware of society’s rules and expectations and how we can test the boundaries and go beyond the expectations placed on us. By becoming critical ... we can read and see how we’re being positioned to think this way and that way by all those different sort of angles”.

Gwen however has a more circumscribed view of critical literacy, which she identifies with “critical thinking” and problem solving. Gwen’s belief about the value of English is
correspondingly more instrumental: it is to “expand their [students’] range of usage for various language functions”—an understanding which is congruent with the Queensland English Syllabus.

Bettina and Lindsay also identified their role as preparing students for the workplace. Lindsay argued that

“one of our challenges in schools like ours in terms of equity and social justice is going to be convincing the students that a decent future for them really lies in acquiring the technological skills that will give them at least even entry level into the upper wage levels.”

In other sections of this paper I report the teachers’ mentioning similar values: “basic” literacy skills, including competence in dealing with linguistic structures (genres), information management, and critical reading. These are viewed as being necessary for participation in public life and the workplace.

These various conceptions of valued literacy will affect the teachers’ priorities and practices. On the evidence of the interviews cited elsewhere in this paper, the teachers have not uniformly recognised the way in which ICTs function as a transformative context that will inevitably reshape sociolinguistic practice. How far this technologised social practice will change the literacy that is valued and taught in schools will depend on how far the assemblages of role-relationships also change.

2.3.2 ICTs and literacy: imagining the future

Simon for one, however, did recognise that ICTs will affect the nature of literacy: given the fundamental changes they will bring to society, there will be consequent changes in genres and in the nature of literacy in workplaces. Lindsay also argued for a fundamental shift towards a multimedia textuality, noting that “visual semiotics is one of the really important directions we have to take because we increasingly no longer can separate the visual semiotics from the words and from the texts”. However, to Gwen and Bettina the development of students’ “basic skills” will still be needed, and they seemed to think that these skills would be independent of ICTs.

To some extent Lindsay concurred with the other teachers’ commitment to maintaining standards of literacy in accordance with conservative parental and community expectations about spelling and the like. However, he believed that literacy learning has to take place within a technologised environment: “without that bigger cultural framework, the work that you do with language hasn’t any richness or depth, and I don’t think it has any real meaning in the real world”.

There is apparent disagreement here about whether the ICTs will bring fundamental changes to literacy practices and products, or whether any such practices in a technologised world will be based on an unchanged set of internal, individually possessed “skills”. On that latter view, ICTs will be a presentational medium or resource only. And classroom assemblages can remain “business as usual,” with ICTs viewed as a “mere” resource.

2.3.3 ICTs and schooling: imagining the future
Perhaps significantly, none of the teachers imagined that the introduction of ICTs (as a resource) would bring about any transformation of the “plant” of the school over the next five to ten years. They agree with Lindsay that buildings and equipment, and the organisational structures of timetabling, year-level groupings, discipline areas, staffing and the like are “remarkably stable institutions”. Indeed, Simon offered examples of how the institutional framing of ICTs had been “framed” by the institution of the school within a week of their installation.

So too the discipline areas will persist as distinct entities, according to Simon and Gwen. At most Gwen predicted that English teachers might need to access subject-specific expertise from other areas (eg Art for graphic outlay and presentation). Lindsay envisioned a greater degree of cross-curricular and integrated curriculum work as an indirect result of ICTs in school and society. And he argued, following Kress (1995), that a future emphasis of an English curriculum must be on the visual semiotics of design.

The present realities of school shape teachers’ imaginations and condition their thinking. You could say that this indicates an awareness of second level effects brought about by the context. However, to the extent that these realities are taken to be inevitable and determining, or commonsense, they condition and constrain the kind of rethinking of organisation and curriculum which can take place. The weight of inertia that schools represent makes some things imponderable. And indeed, the institution, with its “Jurassic management”, does outlast any one individual.

Certainly the teachers were sharply aware that the limits of funding available to schools would constrain the nature, number and use of ICTs; they could not see schools keeping up with the advance of ICTs that will occur beyond the school gates. It is an accepted ideology that schools in the public system are “poor cousins” and that teachers will have to “make do”. Lindsay commented subsequently that it may not be necessary for schools to keep up with the latest hardware and software, since these are consumer “needs” carefully cultivated by producers and marketers. Instead, teachers’ proper contribution may be to find strategies and software which will permit them to develop in their students the kinds of skills in literacy and information management, and the kinds of multimedia, hypertextual structuring of texts and the associative, “field” cognition which are promoted by the ICTs.

Of course, even though buildings persist, what takes place within networked classrooms could be quite different “in terms of access to others and conversations that go on”, as Lindsay put it. Bettina painted an optimistic view of such a classroom, opened up to wider sources of information beyond its walls, so that students can become independent learners who undertake research for themselves and access other sources of knowledge than teachers. She conceded however that classroom interaction would still be needed for the development of students’ interpersonal and literacy skills. Lindsay’s vision similarly pointed to a shifting emphasis, with teachers having less control of content in a
classroom networked to the Web, but more focus on the (verbal, visual, auditory) language of those technologically produced texts, and on the asking of "critical literacy questions in a Socratic type dialogue".

Again one might see a fault line between the teachers’ resignation about the present institutional assemblages, with their conditioning constraints, and their rhetorically driven aspirations for a transformed future with ICTs, which would entail the transformation of the various components of those actor-networks. By and large, however, it is the present realities of school which shape teachers’ imaginations and their thinking—and any possible rethinking. After all, the teachers have achieved their professional subjectivities within that shaping culture. And much effort has gone into stabilising those assemblages and their subjectivities within them.

2.4 Anticipated and perceived changes in socio-cultural practices of curriculum development and pedagogy related to ICTs

2.4.1 Organisation of time, space, interactions

A classroom is also a technology, a “machine” for organising learning, which works with other components in the network, shaping not just the practice but also the practitioners, the actors. The space of the classroom, and the organisation of its furniture, resources and the like embodies the kind of learning which is valued and helps to promote that learning.

The standard size classroom at Park Ridge made it difficult to accommodate the two ICTs. However, a different form of restructuring—the organisation of activities—could be encouraged by those two computers in the classroom. Initially, Lindsay envisaged something “along the lines of workstations”. But after six months he was rather disappointed that most of the teachers had not taken up his preferred approach of “rotating kids through computers, integrating them with laptops and setting up ‘mobile computer labs’”. Instead, many of them still took as their model the computer lab, with all students working on the same task at the same time. Evidently the assemblage of the normative classroom is so well established that it can be hard to think about an alternative, with the renegotiated roles it entails for all the actors.

The participating teachers were certainly aware of the logistical issues of providing access to the ICTs in their classrooms. In a class of thirty students, if students work in pairs and each pair has access for ten to fifteen minutes of a fifty minute lesson, not all students will have a daily opportunity to engage with the ICTs. And so short period of time, according to Bettina, “isn’t very cohesive for them in their learning”.

Gwen had thought through those logistics; her class had a two week period to get through six activities in rotation, in groups of four. In turn, each group of four rotated through the two computers after having planned and drafted their work. Whereas in primary school “you’ve got more time to give them the creative capability of just sitting there and playing for an hour or two or three hours”, according to Gwen, in secondary school a plan “gives your creativity some direction”. She ensured that each group teamed low ability with high ability students and
more with less knowledgeable students, for peer teaching. Gwen argued that the group dynamics can improve higher order thinking skills, while students with learning difficulties or literacy problems can learn from discussion round a computer screen: “they’re able to pick up more words from what’s on there than if they try to read it all themselves”.

Simon was less sanguine about the collaborative potential of such groupings. Those students who have the technical expertise will have a competitive edge, even in groups, while those who are technologically at a disadvantage might become freeloaders by hiding in the group, “so it’s going to be a matter of asking to see everything”—that is, all student products, to ensure that each group member has made a reasonably equal contribution.

At times Gwen and Bettina, like many other teachers in the school, took their students to the computer laboratory. Even here, eleven computers were insufficient for all class members in pairs. The lab was heavily booked, and there were some clashes in the timetabling of classes. Two major reasons were given for seeking access to the labs: the whole class learning of applications, and the completion of assignment tasks.

This is a particularly significant development. Here we see the persistence of a more traditional order of secondary classroom organisation (or network), in which a teacher directs the one activity carried out by all the students as a cohort. It struggles with a newer networked order—or even with that which is more prevalent in primary schools.

Interestingly, matters of organisation loomed largest in the teachers’ talk and thinking. This is in keeping with the emphasis in schools on the imperative to maintain discipline and encourage productive work. In keeping with actor-network theory, one can speculate that a new dynamics in ICT-equipped classrooms could be very unsettling for students and teachers. Some teachers therefore prefer not to contaminate the present (net)working space. Instead, they choose to take the students into a new space, tellingly called a “laboratory” (conjuring up visions of scientific precision), where all can be set the same tasks simultaneously.

It should be noted that there is support for this approach in the Queensland English Syllabus, which sets out as the norm for a unit of work a lock-step progression from “orientating” to “enhancing” to “synthesising”, with all students undergoing the same learning processes together, as they undertake a developmental sequence of activities. So too it is assumed that assignments must be scheduled in the final phase of a unit of work (the “synthesising” phase of the Queensland English Syllabus), and that all students will be carrying out the same or an equivalent task at the same time—individually. For whatever group work may have been undertaken en route, at the end it is the individual student’s performance that must be distinguishable, so that marks and ranking can be allotted on the basis of verified authorship. This syllabus, like others, therefore underwrites the “retarding” effect of current assessment practices.

Overall, during the six months of the study it appeared that no teacher changed to any significant degree his or her normal practice, with its customary assemblage of space, time and bodies, objects and practices, ideologies and discourses. For the most part it was “business as usual”, with computers added to the mix. Such apparent domestication of the ICTs, which would render them inert, might not be permanent, but since change in one “actor” entails change in each of the other components, this is no small matter. At this stage at Park Ridge,
however, the more influential factors are apparently the social technologies of schools and timetabling, classrooms, tasks and assessment as presently organised. And these are geared to perpetuation of their norms.

### 2.4.2 Control and access

Three of the teachers expressed the often-stated concern about students’ online access to undesirable information and people. Simon put it in terms of freedom (for students to wander on the Net) versus control (by teachers keen to ensure the educational relevance of materials and equal access). Gwen saw it in terms of her legal duty of care. Since it is hard for teachers to screen email coming to students, Gwen would limit them to intramail, since that would make it easier for the teachers to “crack down on the students who aren’t using the equipment properly”.

This is a very different set of beliefs and values from that more optimistic vision of autonomous learners (2.3). The teachers’ concern to sift information and screen it from vulnerable children is a part of the prevailing ideology about teachers’ roles, compounded of discourses of moral authority and legalistic “duty of care”. A classroom has traditionally been a site into which teachers introduce material they control, as expert selectors. The unease of these teachers may have to do with some residual anxiety about letting go such control, though this appears to be less of a motive at Park Ridge than in more conservative contexts. Instead, from their testimony it had rather to do with that moral duty of care. Gwen for instance believed that it was her responsibility to vet and select (and cache) Internet sites. Lindsay however was ruefully aware that the teachers’ preselection of web sites (to meet budgetary restrictions, as well as to shield students from trivial or dangerous sites) would have the potential “to restrict their [students’] access to knowledge rather than actually open it up”.

There are tensions between the positive and the negative role attributed to the ICTs in the different assemblages envisaged here. Insofar as the ICTs are seen as a resource (a first level effect) and as a source of information, they are entailed in particular role-relationships with teachers and students in those different assemblages. Each assemblage brings a different role for the teachers, as either co-facilitator of learning or moral guardian. So too students are to be either autonomous and entrepreneurial, or dependent and docile. In practice, it might be hard to move between these very different kinds of actor-network. This is a point to which we shall return.

### 2.4.3 Unit planning: content, activities, assignments

Lindsay perhaps underestimated the resilience of the present, normative assemblages when he expressed concern about some limitations in what he called the “technological imaginations” of the English staff in general:

“I suppose I was misled by the enthusiasm of the teachers initially into thinking that they would be wanting to look for different ways of doing things, but what I’ve discovered is that what they’ve been looking for is different ways of delivering the same content and supplementing their strategies. So they still want to use exposition [as the genre for student composition], but—hey!—let’s use Powerpoint to help us in our exposition!”
In their day-to-day lesson planning, according to Lindsay, the English staff generally appeared not to have a large repertoire of strategies within a coherent program of integrated use of ICTs. Many of them utilised the ICTs only for word processing or drill exercises in punctuation and grammar (paradoxically used as a game to reward students)—“so there’s little of that integration at the moment that I maybe naively expected.”

Lindsay had hoped that such integration would occur when, in helping the teachers to reconceptualise their curriculum units, he suggested using ICTs in the development of students’ assessment items. In this way there would be more likelihood of the computers being used for “authentic” purposes, not just as drill masters or “polishing machines” for presentation of assignments. Given the previous discussion about the importance of assessment, it was a strategic decision on Lindsay’s part to encourage rethinking of assignments via newly technologised genres.

This was followed through in several instances. For instance, in her Year 11 Unit on “The Language of Work”, Bettina aimed to give students a choice about the medium in which the students would present their information on such issues as gender equity in the work place. Some might create a web page. And Gwen would have her Year 8 students, undertaking a Unit called “The Language of Family and Friends”, write a children’s story book, then use Storybook Weaver to integrate written text with visuals of backgrounds, objects, and the like on screen.

Lindsay himself intended to invite his Year 12 students to use a hypertext program, Storyspace, to present a novel marketing proposal. After reading a popular novel of their own choice, they were to take on the role of publicist for a publishing company and write to the author with suggestions for a marketing campaign. By this means, students could, with their teacher, explore issues of consumption, the building of textualised images and relationships and so on. The hypertext program would also offer Lindsay an opportunity for further critical literacy work: after the teacher has graded the assignment, another student may read the hypertext in role as the “author” whose book is being marketed and add marginal notes in order to

“criticise any particular suggestions, exposing values which they don’t agree with that are coming through in this marketing proposal and providing a counter voice to this marketing person. Once you’ve got the technology there it makes the whole idea of juxtaposed viewpoints much easier and more efficient”.

After implementing the unit, however, Lindsay admitted that his hypertext plans were “a complete and utter failure, because of the conservatism of the kids.... Their challenge lay in having to think differently about how they were going to do their assignment [instead of] in the way they already knew and using a model they already had. They weren’t particularly happy about breaking convention, and they didn’t have particularly risk taking behaviour at all [because] they don’t want to be guinea pigs, these kids. And I can understand that, because it’s their future they have to think about. But it was difficult to convince them that their future might be better served by tackling some of this technological innovation that they could apply to their writing.”
This is a valuable reminder that not all students are “at home” in a computer culture, particularly perhaps in socio-economic strata where neither they nor their parents have computer access or experience of the advantages of ICTs. It is also salutary to remember that textual innovation, experimentation and risk taking are not necessarily equally valued by teachers and students, particularly when students are undertaking assessment that “counts” towards their future prospects of study and work, and when their subjectivities as students have been formed within very different networks of practice.

Despite moves towards expanding the range of student-produced texts, several dubious distinctions can be traced in some teachers’ thinking about the nature of text and literacy in a technologised environment. Gwen, for instance, argued that it was necessary in establishing criteria for students’ assessment items to differentiate presentation (including the degree of technical difficulty) from “basic texts”—

“It doesn’t matter what form you put it in, what has been written will be the same. It’s presentation of that text and visualisation of the text which is going to change how it is done... You can write a rotten story and do brilliant visuals, it is still a rotten story. It doesn’t matter how much you pretty it up....”

There is some truth in Gwen’s claim, in that the grammar, spelling, syntax, and (even to some degree) narrative development of a story can remain the same in handwritten form or hypermedia presentation. And there is a point to be made that “mere” appearance cannot compensate for inaccuracies in verbal expression. But it is also the case that a hypermedia text is the whole package: in composition and comprehension it makes its meaning through all its elements. Form cannot be separated from content as easily as this comment of Gwen’s might suggest. To the extent that teachers do separate form from content, they may communicate to their students the notion that texts are basically and exclusively verbal, and that visual, graphic or auditory elements are decoration or at best an enhancement after the event.

In sum: change to curriculum practice may strategically be mobilised around assessment items, but it needs to be underpinned by a broad understanding on teachers’ part of the changes brought to a sociocultural literacy in technologised environments, and a readiness to revise classroom practice to align it more with those changed environments beyond the school. And that preparedness by teachers, as we have seen, entails adjustments in all the components of the network: no easy matter, when so many of the actors are keen to persuade the others that change is either impossible or (at best) uncomfortable.

### 2.4.4 Students’ skill development

**Information Management**

All the teachers mentioned the importance of teaching students how to locate, skim, sift, select and evaluate online information. Simon noted that the use of such information within a critical literacy framework is a “different sort of task”, and that it would be necessary to deliberately organise activities to maximise the critical literacy aspect of students’ English education. Yet Gwen barred students from the Internet until they had read at least half the leaflets, articles, books and the like she had made available on the topic to be explored. Only then could they go online to “expand or add depth”. (She was conscious of limited school-based access to the Internet and feared that students would waste time searching or accessing non-educational sites.)
Gwen intends to teach a useful lesson about not relying on one, easy, source of information: to show how weighing one against another can lead to more sophisticated analysis. These are invaluable lessons; however, this sequencing is a reversal of the tendency of many people outside of classrooms who first seek information via the Internet. It could be inferred that the practice of “print first” derives from a particular valuation, which is being conveyed to the students: the more fundamental information is located in print sources, and the Internet is only a supplement. (In part no doubt this valuation derives from the relative availability of print resources.) Print information can seem more reliable, after all: it has been through the gatekeeping processes en route to authorised publication. And it fits more comfortably within the current-traditional assemblage of actors within the classroom.

Hypermedia and Hyperlinking
Both Gwen and Bettina introduced their Year 8, 9 and 10 students to one of several hypermedia programs: Storybook Weaver, Scala and Web Page Wizard. They valued the development of such skills in their students. Gwen was particularly conscious of needing to introduce junior students to basic multimedia skills (backgrounds, objects, sounds, music—everything except animation) and build on that in subsequent years.

Granted the value of developing such expertise, a question remains: to what extent does such teaching deliberately go beyond using ICTs as presentational medium? That is, how much attention is directed towards the ways in which form and function in cultural contexts condition the various textual elements, including the verbal? As noted already, there are possible inconsistencies between this view of linguistic structures and features “morphing” in digital environments and assumptions about “basic” literacy apparently independent of contexts.

Electronic Genres and Literacy Development
Thus, as we have noted, some of the teachers spoke of their attachment to “literacy” or “basic literacy” as somehow more fundamental: as prior to and separate from the sociocultural practice of reading and writing in an electronic environment. Perhaps contradictorily, Gwen also testified that her students with learning difficulties gained greater control of genre and sentence structure by
means of ICTs: “putting their ideas onto paper now became a visual concept on the screen and they were able to interpret better what they’d typed on the screen than they were able to do in their hen scratch handwriting”, since they did not lose track of where they were coming from and going to.

Gwen and Bettina also concurred with Lindsay in seeing digital texts such as web sites as having their own characteristics in structures and linguistic features. Gwen reported that her students had learned about how to make an impact on a reader on screen according to the message they wanted to “get across”, through the choice and placement of graphics, the “page” layout, use of sub/headings, choice and size of fonts and the like. So too the students learned how to integrate a range of news genres with the visual presentation of web pages, for example by converting the written form of a contents page to an online form with hyperlinks.

2.5 The impact of ICTs on teachers’ current critical literacy theory and practice

Six months is a very short time in which to expect change to become apparent. However, as has already been suggested, this period may be sufficient to trace the persistence of current theories and practices which might have an impact on any subsequent developments. In particular, it has been argued that it may be difficult to introduce an ICT into a stable assemblage of actors and expect it to work wonders without also working up a storm. If teachers attempt to maintain the classroom on an even keel, and the various actors’ roles on board as established by tradition, the course they steer will be guided by older discourses.

2.5.1 Teachers’ self-definitions

The sense of self, or professional subjectivity, that teachers have will be very much bound up with their attitudes towards and interactions with ICTs. During these investigations there were few reported changes of sense of self, although Bettina acknowledged that she was becoming more “computer literate”.

Knowledge navigators and facilitators
All the teachers described themselves in terms of classroom management. Simon called himself a “navigator”—that is, a manager within the constraints of time, technology and the like. More positively, he glossed the teacher as “navigator of a ship”—one who guides students through a process, “giving them a greater sense of discovery, forming learning partnerships between those three players” of teacher, student and ICTs. And he has a role to “democratise” the use of ICTs within the classroom.
Gwen similarly described herself as a “facilitator” instead of content giver in a technologised classroom, which she envisions as being “more student based, more student orientated, [with] more student responsibility”. Her role will be to prepare students for life as “self-motivated learners” who can manage their use of time as they undertake projects, sometimes with the help of external mentors via email. So too Bettina identified herself as a facilitator and “negotiator”. Since she does not define herself as the expert and source of all content, but as an exploratory learner, the introduction of ICTs “hasn’t made me feel incompetent because they [students] know more”. Lindsay agreed with Gwen and Bettina that in a technologised classroom his will be the role of facilitator rather than single source of expertise and information. However, Lindsay also saw his role as in some sense Socratic, provoking rethinking, encouraging critique.

The currently dominant discourse of teachers as “facilitators” rather than experts and authorities surfaces here too. (It is sometimes characterised in the slogan, “From the sage on the stage to the guide at the side”.) And while facilitation is a more appropriate role in a classroom with access to digitised information than is the traditional stance of authorised knowledge-guardian, such a comforting term might be substituted for thinking about how ICTs can, should, do change relations with other actors and relations to knowledge.

Indeed, comfort is an important factor for any of us in maintaining our present identities:

Routine is integral both to the continuity of the personality of the agent, as he or she moves along the paths of daily activities, and to the institutions of society, which are such only through their continued reproduction.

Giddens 1984: 60

Critical pedagogues
Earlier sections of this report have identified very diverse understandings of the nature of critical literacy and of appropriate classroom strategies. Yet Simon, more knowledgeable and experienced in critical literacy, as well as Gwen and Bettina, who are least expert, pointed to examples in their teaching practice of locating gaps and silences in texts. This is a typical move of critical literacy, to look for the not-said as a way of locating the partiality of a text, the selectiveness of its representation. This enables teachers to ask that characteristic question, “Whose interests are served by this text and its representations?” (This broader political and ideological context has not been a feature of Gwen’s practice, which tends to focus on the linguistic structures and features of texts per se.)

When the teachers were asked what they would identify as “critical literacy” in their intended teaching with ICTs, the four sketched different plans. Initially, Simon saw an expanded scope for critical literacy given a diversity of multimedia text types and forms of communication with other cultures. For him online access enhanced the pedagogical principle of “the more voices you hear in a classroom, the better”. But he was also aware of the need to think critically even about “what the technology is, who has access to it, who controls it, how does it control me as much as I control and produce for it?”. Indeed, Simon continued to focus primarily on the authority and reliability of information, given what he saw as students’ tendency to rely exclusively on the Internet as their store house. Therefore he intended to teach the students to read for the authority of the source of Internet information, utilising the interrogative techniques of history: “what are the sources, who wrote them, are they primary, are they
secondary, are they reliable, are they valid?” So too, explicitly using the analogy of a law court with his students, he would examine the evidence for its reliability.

In the event, for various professional and personal reasons, Simon undertook only incidental critical literacy work with computers, maintaining a stance of scepticism about the vaunted advantages of ICTs:

“...We have the potential now to have kids think more analytically with computers. And we have the potential to be more critical, downloading a variety of texts and ideologies from the Net. However, I don’t know whether increased analysis and increased diversity of texts necessarily translates to increase of critical literacies with computers”.

When Bettina was asked what she anticipated would be the effect of ICTs on her units of work, and the focus of her teaching, she stated that she would be involved in “knowing the strengths and weaknesses of the hardware and software, looking at the authoritativeness of the computer, having students critiquing their own work”. And like Simon, Bettina was also interested in finding opportunities to critique the “truth” on any one web site. However, after implementing her units, Bettina did not identify any critical component in them.

Gwen’s understanding of critical literacy as critical thinking would mean her helping Year 8 students to enhance their written texts via multimedia software (thus “gaps” would be filled in not just by imaginative visualisation). Gwen’s Year 9 students would also be presenting various perspectives on Logan City, including their own, for an online magazine. This would afford Gwen the opportunity to discuss “how all these different viewpoints then get linked together and how important it is for us to be
After teaching, Gwen asserted that the availability of more sources of information online provided a richer opportunity for students to develop critical awareness, with her prompting them to assess relevance, quality and adequacy of the information, then asking “Whose viewpoint’s being presented? How is it being presented? And what is trying to be said? Are they covering something up? Do we need to look into it further?”

In these plans and their follow-through, ICTs are evidently conceived as a presentational medium for textual enhancement and as an online source of uncertainly authorised information. However, the teachers also offered some suggestions about critiquing software, analysing the texts that discuss ICTs, or focusing on the form of digitised texts. But on the whole, it is content, whether generated by students or others, and to a limited extent context, which is the focus of critical literacy work as conceived here. And the language / literacy part of the term is rather underplayed—that is, the ways that the (technologised) word constitutes the world. Again it would be possible to see the persistence of older ideologies and discourses of English at work in these networks of practice reported on here. It has been customary in a print-dominated world to divorce “content” from its medium (the technology of the book) and focus only on the words on the page for critique. But there are also signs of the new, even though at this stage they may be (uneasily and unevenly) assimilated within the known.

3. Conclusions

If my interpretations of the evidence can be trusted, what we see here are signs of an uneven practice: of tensions and contradictions, of hesitant beginnings, of assimilations of the new to the known, as well as some accommodations of the known with the new.

Now certainly the institutionalised discourses and practices of schools contribute most powerfully to the assemblages that are classrooms, and they offer teachers a particular subjectivity few can refuse. That is evident in the priority some of the teachers gave to an alphabetic “basic” literacy distinct from (technologised) contexts. It is evident in the conception and use of ICTs as a supplementary resource for literacy operations; in the moral gatekeeping around online information and communication; and in the customary organisation of curriculum sequencing, classroom space and time, and assignments. Each of these gives teachers and students a role in relation to each other, as do the resources of the classroom (including ICTs), the available space and the structuring of curriculum and timetable.

Nonetheless, evidence to the contrary should not be underplayed. In Lindsay’s practice and in Simon’s thinking there is an important sociolinguistic and critical focus. In Gwen’s classroom space and time and tasks are beginning to be reorganised along the lines of workstations. And Bettina continues to define herself as a learner, “clicking here and there, making mistakes....”

For the most part the teachers’ concerns were apparently not primarily curriculum driven. Issues of management—whether of time, space, activities or students, lab bookings and access
to online communication and the like—loomed large for these teachers. It is evidence that ICTs do not function simply as a resource but are prone to affect the contexts of their use. But where teachers are concerned with classroom management, it may be that they will want to maintain “business as usual”: they will hardly be persuaded to encourage transformation of the actor-networks that embrace them.

In times of great and swift change, most of us seek some stability in sameness. As Lindsay put it,

“teachers’ identities are threatened by technology and we’re asking them to embrace something that isn’t necessarily a “normal” part of their lives—so why should they be enthusiastic about it? It seems to me it’s a bit like saying that everyone must love cricket and become highly involved in cricket. To take the analogy further, how would teachers react if asked to include cricket in their programs across the curriculum? There is a real challenge in all of this for people trying to integrate technology into the curriculum, especially in an environment where many teachers have seen new ideas come and go and have grown, in many cases, quite sceptical of change and the demands that are constantly made on their time.”

Any teacher may feel that, by comparison with the turbulence of imminent change, the status quo is pretty tolerable. Those who seek to bring about change in schools must be able to provide a satisfactory answer when teachers ask, “What’s in it for me?” Realistically, this means, “What kind of difference will the introduction of ICTs make, not just to student outcomes but also, primarily, to their behaviour?” That is, can I be assured that there will not be destabilisation of the student-actors’ role in their classroom network. But perhaps the question could also be rephrased as, “Where am I in it?” That is, “Can I see a desirable self, a self I like, with real satisfactions, achievements and sense of worth, in this future?” And “Can I imagine myself as an actor whose features resemble those I have assiduously cultivated?” In short, we are in the realm of third level effects, in which the ICTs could play their part in contributing to transformations of learners, teachers and learning contexts.

Any professional development program therefore must ultimately help teachers to imagine and practise a modified subjectivity—a new sense of literate self in a technologically saturated environment. Any such program must encourage the following in teachers:

- a desire for a changed teaching self in a changed teaching practice;
- a willingness to question the common sense of current institutional practice (those actor-networks);
- the development of a three interconnected forms of imagination: sociolinguistic, technological and pedagogical.

And it must offer a number of strategies for accomplishing these, over time and in company with others who are similarly divided in the present between their past and possible futures—until the new assemblages become stable and comfortable—become “business as usual”.

By and large my research has highlighted the tendency of the other actors in a network to maintain the status quo when ICTs are added to the mix. If they are not simply to become “domesticated” to uses peculiar to schools, in the first phase of their implementation administrators, curriculum leaders and teachers should not attend solely to the operational aspects. It may be too late when a practice is already established as normal in schools, to ask
teachers subsequently to engage with the socio-cultural and critical and to change what has become customary and comfortable.

_Digital Rhetorics_ concluded that the site studies were marked by complexity, fragility and dis/continuity. This follow-on study suggests a particular “spin” on those terms and a message for teachers’ professional development needs. First, complexity: we need to support teachers in understanding and beginning to feel comfortable amidst the ambiguities and “messiness” of complex interactions among actors in new networks. Second: fragility. If such new assemblages of actors are to endure, they need to be supported until they become habitual. (This is not the same as the stasis of the old pedagogical technologies or domestication of the new.) Third, dis/continuity. There is unlikely to be no simple “improvement” continuous with the present, if by literacy “improvement” we understand the transformed practices of multimodal literacy by ICTs. Those third level effects I have alluded to through this paper are among other things dependent on the discourses which give teachers their priorities and purposes and their sense of self. Nothing less than a reconfiguration of all the elements in those classroom networks, including discourses, will serve to effect significant change in literacy teaching and learning.
REFERENCES


