

Reshaping Literacies in the Age of Information

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This paper draws on two studies conducted in Toronto in 2000.¹

Introduction

Old ways of teaching, old technologies and old literacies

"This is a pencil."

There was a time when this was a valid snippet of language for language learners. Structural notions of language and behavioural notions about language learning prevalent in the 1950s, 60s and 70s gave way to more communicative notions of socially appropriate, functioning language in the 1980s.

We moved from structural language building into more communicative paradigms as we gained an important insight into language learning: it's not only what you say but how you say it. Now at the dawning of the twenty-first century, we need to question whether we have looked at literacy proficiencies the same way we have thought about language proficiencies: are we working with socially strategic literacies?

Although we don't work "This is a pencil." much into dialogues anymore, pencils, themselves, still hold an important place in our literacy practices. The pencil as technology is an indispensable tool. It is cheap, reliable, portable, erasable. However, the technologies that facilitate our literacy practices have proliferated in the information age and become ever so much more complex than the simple lead pencil.

Once upon a time schooling meant learning "the three Rs": reading, writing and arithmetic. Basic literacy and numeracy still form the cornerstone of fundamental education. However, literacy and numeracy competencies have changed dramatically over the tenure of compulsory schooling.

Literacy as we have known it over the past century has been a world principally on paper; a world most often serving culturally defined communities of readers; a world of socially sanctioned knowledge in static, hierarchically organized texts. But, as we move into the global society of the 3rd millennium, much of the social and political ground of literacy is shifting: the relationships between readers, writers and texts are being repositioned; paper is becoming increasingly an electronic abstract; language norms and standards are being rewritten; textuality is evolving dimensionally. The gatekeepers of knowledge in academia and the publishing industry are being challenged by the web, which provides instant mass access to texts no longer subject to tedious decisions about quality through peer review processes. Enter the era of multiple, post-modern literacies.

English today

Are we keeping up with change?

Our linguistic ancestors were a collection of brutal northern European tribesmen who came from around Denmark, Holland and Germany. They invaded Celtic civilizations in a northern island which, after much bloodshed and pillaging, eventually became known as the land of the Angles: 'Englaland' (Angle-land) (McCrum et al, 1986: 60-61). Their language, now better known as English, has survived many waves of other conquerors, including particularly, the Vikings and a nearly 200 year stint under Norman French rule.

English has changed greatly in both form and status over the past millennium from being the vernacular of illiterate English peasants under the rule of the Norman French to a - and indeed most would say the - language of global importance.

Languages achieve dominance through their speakers, not through some intrinsic quality of the language (Crystal, 1997). International languages are powerful languages. This power is wrought through political, military or economic might (Crystal, 1997). The language of greatest economic and political power in today's world is increasingly thought to be English.

Crystal (1997: 53) posits that English got to these lofty heights through a combination of pre-20th century British colonialism, and 20th century American economic power. I'm going to add a third significant contributing factor: the world wide web.

Our new technologies have brought the corners of the world together - at least the rich world. Everyone else wants in, too, and even if they don't, they are pegged by cyber-colonialists as emerging markets. Marchart (1998) sees the cultural fabric of this cyber-colonial force as either techno-orientalism, emanating from Japan, or the new electronic frontier, surfing to you from California. But there is no disputing the fact that the vast majority of traffic on the web is in English, the language of electronic access. On the plus side, this makes English an easy sell - not that English has been hard to sell for the past few hundred years. On the minus side, it creates a global climate for what Phillipson and Skutnabb-Kangas (1999) call "Englishisation", which threatens linguistic ecology.

The world is certainly becoming a much smaller place and with increasing mobility comes multiculturalism. We live in a more mobile universe now, and not only do we need a lingua franca for global economic grease, but this language is being used more and more for both multicultural and intercultural communication.

As the use of English escalates in importance in intercultural contexts, the language is steadily declining in native speakers (Graddol, 1999). English is increasingly becoming a second language in this world; an adjunct language used interculturally. One of the great international forums for intercultural use of English is the internet.

As English globalizes, it simultaneously localizes (Singh & Singh, 1999), and, according to Crystal (1997) may eventually splinter into global and local variants, as did Latin over a thousand years ago. In terms of global effects on English, we are all trying to keep up with the changing language code as the electronic universe unfolds. Internauts all, we read icons, abbreviations and emoticons as normal parts of what many must think was once a perfectly good language.

With increased web-based communication, reading and writing are changing dramatically. The great majority of reading and writing on the web is in English. And what is happening to this language? Writing conventions and standards are being rewritten daily. Not only do we read: ICQ, b2b (business to business), and the ubiquitous :) as standard units of language these days, but we seem to have lost capitalization and spelling regularity in the bargain.

Electronic language use is increasingly case-creative, e.g., WordPerfect, iMac. According to Russell Smith, writing in the Globe and Mail (25/11/2000: R11), because DOS wasn't case-sensitive, people started to use capitalization - or not - in creative as opposed to traditional ways - essentially as style. We simply didn't need upper case to write email addresses. We didn't bother to stop and capitalize in our sloppy emails. And now we're seeing the result in print, for instance the new eatons has lost its initial capital and its apostrophe. This is in the real as, vs. the virtual, world of print.

Conventional spelling seems to have become rather optional in many electronic language environments, as well, due again to the ephemeral nature of writing in emails and chat rooms, etc., that mimics speech. Nonetheless, inaccurate spelling is not necessarily to be worried about, in any case, because our software now makes changes for us - reasonably efficiently if you like American spelling.

New literacies

Literacy reconsidered

What is literacy? Once upon a time it was the ability to read and write. However, literacy, like everything else in life has become much more complicated. Where once we learned to read hierarchically organized texts written on paper, now we must also navigate post-modern hypertext on screens. Accessing and producing these texts requires different cognitive skills and social practices.

As the world we live in gets increasingly better connected in both real and virtual realms, our needs for literacy diversify. Indeed we now speak of literacies, signalling the varied literacy practices we use, and even multiliteracies, a term coined by The New London Group and explained as follows:

.we attempt to broaden this understanding of literacy and literacy teaching and learning to include negotiating a multiplicity of discourses. (New London Group, 96: 60).

So where is English as a second language within this notion of "a multiplicity of discourses"?

Given the increasing multiculturalism of our province, we need to think carefully about where English fits into the scheme of complex language and literacy practices expected of Ontarians today. This is especially salient in the English as a second language context. What are socially, politically and economically appropriate literacies in this day and age? What should teachers of ESL be teaching?

My daughter learned cursive writing in Australia, where she attended school in grades 3, 4 and 5. In grade 4, Mrs Binks, her homeroom teacher, awarded pen licenses to the children only when they met her standards for writing with a pencil without making a terrible mess, a pencil, being erasable if you don't keep within the lines. When my daughter finally won her license to use a pen, she wrote to every friend and relative imaginable with her brand new ball point pen and told them proudly that she had earned her pen license. As you might imagine, no one had ever heard of such a thing as a pen license before. She got all sorts of amusing replies, including one from my mother suggesting that most of us would fail any handwriting test these days and we should all have to earn our pen license.

Although I still think we need to be able to print and write manually, handwriting is becoming a lost art. Indeed, some might even say that it is going the way of the dodo. This is not to say that questions about right and left handedness will relate only to your golf swing in the future, but most of my writing these days utilizes a keyboard. Touch typing is certainly as important as handwriting. Yet do we teach it systematically in school? Much has changed since the days when learning to type imprisoned a female in a pink-collar ghetto. Little did we know then how our own education, both in terms of fundamental skills and social understanding, would be so changed through binary code.

A historical view

The information revolution is but one in a series of technological revolutions that have impacted on education. These must include: the scientific revolution, which certified knowledge over belief, such as in evolutionism vs creationism; the industrial revolution, which allowed mass distribution of print; and the electronic revolution which gave us transistors and microchips, so that we could communicate more easily across our shrinking world (Lotherington, 1999).

Education is regulated through access to literacy. Previous to the 20th century, education was the domain of the privileged and was synonymous with prestige, classical languages. When education began to be publicly available, it was not only for the elite but it was carefully controlled by those in power - most often church or state - and maybe a colonial culture.

The 20th century has spawned mass education - education available for everyone, then mass media; information made public, not only intended for the elite, but selected and organized by those in power. These media have included print mass media, then, with the help of the transistor, electronic media (radio, television, cinema), and, later with the microchip, and interactive new media. With the internet, archiving knowledge is no longer the preserve of the elite. The interactivity of the web and its archiving potential undoes peer refereeing as well as the democratizing creation of and access to knowledge.

Textuality

Electronic texts are quite different from paper texts. Hypertexts are dynamic and open-ended. Screens may be full of movement, print being designed, placed, coloured, illustrated, animated and even connected to sound. Electronic pages often include simultaneous multiple texts utilizing various media as in dedicated news screens, with stock market quotations marching across the bottom of the screen, weather reported in another quadrant, news above and so forth. These pages are connected through links in nonlinear ways. This is hypermedia (Nelson, 1992: 2).

Strangely enough, in the age of information, we have a hard time finding it. Postmodern reading increasingly involves navigating data clouds for information, which is not organized in hypertext as it is in nicely indexed, hierarchically arranged and peer-reviewed books and journals. Information search skills need to keep up with the new ways in which information is stored and accessed. The literate user needs to be able to choose, locate, and evaluate information. We must be able to guide this search.

Critical literacy

In the information age, educating for critical literacy is essential so that ESL learners can engage with new as well as old texts. We see this immediate and startling need for critical literacy in the very justified public worry about children accessing pornography on the web. It's all out there - how do we teach children and adults alike to critically select?

The notion of critical literacy is a diffuse one. The roots of educating towards a socially constructive literacy are found in the writings of Paulo Freire, whose work with adult literacy questions the politics of language and literacy education.

Allan Luke describes the epistemological territory well (1997:1):

Although critical literacy does not stand for a unitary approach, it marks out a coalition of educational interests committed to engaging with possibilities that the technologies of writing and other modes of inscription offer for social change, cultural diversity, economic equity, and political enfranchisement.

In the age of information, we need to be very concerned about teaching, learning and practicing critical reading skills.

The internet has been described as disintermediating (Clark, 1996; Willmott, 1997). Essentially this means that the proverbial "middle man" is cut out of assessing, critiquing, censoring and shaping text. Information age learners are increasingly both the publishers and consumers of electronic texts with the direct-to-you publishing capabilities of the internet, which displaces the literary elite, including the reviewer, the publisher, the teacher and the librarian. Electronic texts are seldom peer-reviewed; quality control is left to the reader. Because of this, critical literacy skills need to be sharply honed in all readers from very young children to the adult coming from another or a pre-electronic culture.

The internet makes the world your oyster; texts can come from anywhere. It will be part of our job to ensure that all learners, especially those who come from other cultures, understand how to critically mediate the fragmented chaos of hypertext out there in cyberspace and, more importantly, to know how to incorporate both modern and post-modern literacies into knowledge construction. In so doing, we need to reconceptualize classroom literacies.

Language

As we have seen, literacy is mutating rapidly. Over the past decade, new media have developed exponentially, to carry multimedia messages that blur traditional communicative boundaries between speech and writing, saturating electronic texts with graphic illustration and orchestration, connecting and mediating our ever-shrinking world in nanoseconds. Rapid changes to text access and form are reshaping the

epistemological boundaries of literacy education. In fact, the very stuff of written texts, language, is changing along with texts.

Many things are happening to language. For example: formality boundaries between speech and writing are disappearing; writing systems are hybridizing; cultural traditions such as the authorizing power of the signature are weakening; and cyberspace demands are mobilizing American English as global Cyberspeak.

The exponentially increasing communication technologies we have at our fingertips, increasingly complicate what used to be distinguishable lines drawn between written and spoken language. We "talk" in chat rooms that require literate access, pay bills on telephones using keypad knowledge, "phone" interlocutors using keyboards and modems, hold virtual office hours and classes, and casually contact colleagues around the world - including those we have never met in person - via email.

The traditional dichotomy between written language and oral language is quite simply melting in electronic contexts. Formality boundaries, routinely taught by ESL teachers, wherein the formal requirements of the business letter, or the existence of literary terms, such as thus, heretofore, and notwithstanding, not to mention grammatical fossils such as whom and shall that were previously shown their rightful place in language, are now are doomed to extinction in paper texts.

I remember visiting an adult basic literacy centre in Toronto in the 1980s, for the purpose of discussing text simplification. A lesson on written vs spoken language I have never forgotten was embodied in the comment from a woman who was learning to read and write: "Thus!" - what kind of word is that! I never heard tell of it before. What does it actually mean?"

I predict that thus will go the way of forsooth, methinks, and thine and emoticons :) and acronyms such as b2b (business to business), b2g (business to government), b2c (business to consumers) (The Globe and Mail 17/8/2000: T2) will grow in their place. We are seeing changes in Chinese writing, for example, where untranslatable terms such as: TCP/IP and www have been imported into the script itself, which is not alphabetical.

Electronic literacies have impacted on social and cultural traditions in many interesting ways. For example, signatures, the classic literary identifier - at least in a Western culture such as Canada - are losing their supreme clout as we increasingly accept unsignable emailed letters for administrative purposes. We can conduct an amazing amount of electronic business, doing everything from applying for a loan to making auction bids on electronic paper.

The biggest challenge of all to language and literacy practices emerges from technocolonialism, which influences not only the shape and function of English, as well as who needs to use the language, but its already dominating importance globally. This creates an ecological issue for teachers of English as a second language. English should not take over the domains of other languages. Teaching ESL is about adding to individuals' language competencies, not decimating our society's language wealth.

Teaching ESL today

Focus on language and literacy proficiencies

Teaching a language is very complex. Embedded in the teaching and learning of language proficiency is the development of socially appropriate literacy practices. No one would consider teaching oral English without a literate base. This doesn't count as economically viable language learning. Literacy - especially literacy in English - has changed; teaching English, especially as a second language, has to change along with it.

Whether explicit or not, we work with strong social biases about language and literacy. Society sees literacy in terms of the dominant language or languages, for example. Literate behaviours that are sanctioned include writing academic papers, reading good literature, writing poised formal letters, etc. Literate behaviours that don't get much of a nod include anything using unofficial, minority languages, and reading or

writing texts society doesn't understand and approve of, such as comics. But new genres and access routes to texts are emerging daily, and we can no longer base all teaching of reading and writing in English on historical textual hierarchies which, at one time, built towards classical attainment and literary success.

Furthermore, educational notions of literacy progression may be viewed, erroneously, according to our own notions of chronology. How many of us are comfortable with technology? Very few of us. Most of us have learned modern literacy behaviours through print media, and we tend to hierarchically process text as - first you learn to read on paper, then you can go on to the computer - as if the computer were a sort of bonus. Our children, on the other hand, can manipulate technical systems with much greater naturalness than we can because this is how they are becoming literate - on the computer at home when they don't want to do their math homework.

We need to ensure that we teach both hierarchical reading and post-modern reading as a pedagogical necessity and that these are contiguous, not sequential. We tend now to address literacy needs in an invalid chronology of first ESL learners' need to do paper and pencil writing, then they can go on to the fancy computer stuff.

We perform a terrible disservice to new users of ESL if we do not teach them flexible literacies. They need to be able to access relevant texts, old and new. This is not easy. Our educational institutions - and certainly our educational budgets - are based on old technologies and old accesses.

There is a buy-in cost to technological learning. However, I believe that human rights issues are at stake if we locate our new ESL learners in old technologies and old ways of learning - ways that will not prepare them for life in Ontario, in Canada, in North America and in the virtual universe within which they, too, will search for jobs.

Focus on the learner

What do ESL learners need to learn? We need to re-evaluate not only what learners need to learn but what they do not need to learn.

ESL learners still need to learn to read and write English. They need to be able to manipulate a pen. They need to read and write connected text. They also need to understand how texts are and can be connected. Hypertexts consist of short, largely unedited, open-ended, nonlinear and linked electronic pages. The postmodern reader and writer needs to be able to source out texts and effect useful links. This is knowledge construction.

There has never been a better time to teach critical evaluation of texts; choosing what you need, when you need it. All academic literacies require critical evaluation skills. Students increasingly accumulate a critical acumen through process writing, library research, design projects, conducting scientific experiments, physical competition, writing reports and essays, playing a musical instrument and so on. However, utilizing internet-based resources means that the reader has to do the work of the reviewer, publisher, librarian, and teacher because virtual information is unfiltered.

The disintermediating properties of the web eradicate the current quality control bottleneck effected by book and journal publishers. The disintermediating effects of the web also include individualizing the organization of information. There is no handy auto-librarian function amongst all those text sorting commands. The reader must be able to locate texts and evaluate their quality, relevance, and appropriateness and this takes an increasingly greater critical sense. These critical literacy skills are needed by all learners, from the pre-schooler, (who shouldn't be surfing censored sites), to the adolescent in ICQ conversations to the adult learner, looking for everything from employment opportunities to a life partner.

We may also need a serious reality check amongst ourselves. For far too long, ESL teachers have been treated as the grammar police, armed with a red pen and an itchy trigger finger. Beware the mechanics of

language! Good spelling and grammar - which of course simply mean accordance with prestige regional norms - indicate education.

This is not to say that presentation is not important in language, especially in written documents. I have problems going red-pen gaga myself, and I cringe at nouveau grammar, such as "if I would have known", which is endemic in Ontario. However, spelling and grammar, which are sensibly seen as subordinate to creative and functional language use in any case, can now be at least partly relegated to machine checking. This doesn't mean that we suddenly don't need consistent spelling in order to read a text without problems, but we have other things of more substance to worry about, and we should readjust our priorities accordingly.

We need to critically evaluate language, literacy and learning skills, so that those more exploratory and collaborative skills that are made possible through electronic media are facilitated. ESL learning can't simply model past performance but must be recreated within the ever-expanding language universe that is now unfolding.

Focus on the teacher

Many of the teachers in Ontario teach students who have completed - for better or for worse - their foundation schooling. Others teach students who have had some of their basic education in a system that doesn't parallel ours. Still others have children of school entry age who come from a different cultural and linguistic milieu.

The job of the ESL teacher is very important: to enable learners, wherever they are in life, to be able to function optimally in what is a second language of powerful economic, educational, social, business and political utility: English. This, as we all know, is a challenge, depending on where the learner is coming from, metaphorically speaking, and where she or he is going.

ESL students get Canadian socialization alongside their language learning. A part of this socialization is to the social structure of the Canadian classroom. Every teacher in this room could tell a story about ESL students' or their families' culturally different notions about the teacher, and stories would range from gift-giving of indeterminable intent to social fears of speaking to, much less questioning, the teacher.

A common expectation of our ESL learners is to sit in a very teacher-centred classroom. Teachers have authority. Students sit quietly, listen and learn.

However, one of the success stories of computers in the school, where they have been best put to use, is that they facilitate collaborative teaching and learning. Indeed some presenters at computers-in-education conferences have gone so far as to say that the software is secondary to the collaboration it facilitates in learning. Teacher-centredness is not very compatible with new media. Control of information is out of our hands. This can be a scary thought.

Most of us were, ourselves, educated in a teacher-centred system, where we learned to follow the teacher as model and to refer, and, indeed, defer to acceptable guides, whether human or textual, in order to solve problems. We asked the teacher or we looked it up in the dictionary or the encyclopedia or the textbook. In fact, most of us learned about learner-centredness in teacher-centred education courses in university.

Most of us, then, are ill-prepared for the sorts of learning strategies we all need to develop in the age of information, where electronic problem-based learning is at the root of knowledge construction. Children born in this era are not uncomfortable, however, with problem-solving in electronic media. Indeed this age reversal in the direction of information transfer is extremely hard for most teachers and parents. How often do you hear, "I'll ask my kids. They know how to use this stuff better than I do."

In schools with elite computer-based programs, teachers have worked hard to come to grips with the problem of kids knowing more than they do. It is endemic. In some classes, collaborative teaching groups

which include specialist computer teachers are formed to revitalize the curriculum through planned integrated teaching modules. In others, student collaborative groups are formed with one or two students picked for special computer training which they then disseminate on a help-desk basis in class. Other schools use software to enable conferencing across age groups, classrooms, schools, cities and borders, both provincial and national. All are based on some conception of collaborative learning. "Banking education", made explicit by Paulo Freire (1998/1970) in *Pedagogy of the Oppressed* - as the idea of pouring knowledge into essentially empty heads - becomes extinct in this climate of learning.

So what do we teach now? This is a hard question. The answer changes day by day. But we do have to realize that the information revolution is not going to retreat. This means that we will have to attend to new kinds of texts and text processing, new ways of learning and new ways of teaching.

Basic reading and writing practices are rapidly changing. Increasing technological support for language mechanics means that sentence mechanics are increasingly being assisted; templates for letters mean that we can relegate some of the tedium of form - whether that form persists or not - to electronic tutoring.

Students will need much more sophisticated reference skills with the publisher's bottleneck being broken, though. Direct-to-you text access means that information is not evaluated, censored, organized, and stored in a logical system. Hypertext is open-ended; we who read electronic texts are involved in their writing in that we concatenate webpages according to our needs. The critical skills facilitating electronic information search and retrieval, not to mention publication need to take precedence in this environment.

We do a disservice to our ESL learners of all ages if we teach them only old literacies. Especially in adult learning, such teaching is a breach of human rights, creating a paper-literate substratum of society that will become obsolete. ESL learners of all ages need old literacies, certainly; they need to be able to negotiate text in all forms - old and new, modern and post-modern, traditional paper and pencil and new electronic media.

Conclusion

"Computer" is a back-formation, based on the verb "to compute". What we do now with the computer includes, but very much exceeds its original number crunching function. Computers have changed how we live, how we communicate, how we organize our day, our work, our social lives, what we read and write and how we read and write.

Technology isn't an add-on or an option. It isn't going to go away and we can't ignore it and do things the old way. The technological revolution we have been experiencing, which has been most acute over the past decade, has changed our world and our ways of expression. We communicate differently; we read differently; we write differently. We have created dimensionally enriched genres of text and coined new language conventions. We have seen the once easily distinguishable borders between speech and writing disappear in chat rooms, bulletin boards and email correspondences. We have seen the historical, institutional sanctioning of literature and literary standards disintegrate as authors become their own publishers, interested net surfers become reviewers, and God-knows-who become distance educators. The socially sanctioned intelligentsia is cut out of this electronic picture.

This paper is intended to raise awareness and stimulate discussion. There aren't easy answers to the issues I raise because of a number of factors. There is an economic entry cost to new literacies. We as teachers haven't necessarily achieved a technological comfort level ourselves. Most of us need to work collaboratively with technical support. Indeed, technology is moving so quickly that no one is on top of things. But the line between the haves and the have-nots - in terms of computers - is growing so rapidly that we need to make sure we don't breach human rights by training a subclass of paper literates in an increasingly technological world.

In this paper, I have highlighted how English language and literacy are changing dramatically as we enter the age of information. This has profound repercussions for teachers of English as a second language as it does for learners of all ages, which, incidentally, we have all become again.

1 The studies this paper draws on are: Assessing public conceptions of literacy, which I conducted in 2000 with the assistance of Jean Shi Jing Xu, Maria Carmen Carrero de Salazar, and Franca Vani; and Factors that contribute to innovative teaching with technology, an ongoing large-scale, multisite research project which is being conducted in the Centre for the Study of Computers in Education at York University. My role in the FACIT project is as associate researcher, and the schools I have been studying for this project are in the greater Toronto area. I would like to acknowledge with gratitude York University Faculty of Education for supporting the APCL project with a Minor Research and Development Grant, and the Telelearning Network of Centres of Excellence for their support of the FACIT project.

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