

# AUTOMATED LITERACY

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It is time that educators carefully consider the effects of media and online networks on our students and the worlds they grow up in. In 1964, Canadian scholar Marshall McLuhan boldly introduced the current use of the term "media" to the world through his landmark book called *Understanding Media*. 50 years later, there are still large gaps in our understanding of the media, particularly digital media, and its effects not only on education but also in the daily lives of populations around the world. Some of this gap in comprehension can be attributed to the rapid pace of technological development; literacy research, which lags behind in order to assess the effects of changes to the way we communicate and must go through time-consuming funding processes and methodological protocols, might pick up on a new writing or reading technology only to find that by the time the results are ready to be announced, the technologies in question have become irrelevant or obsolete. One thinks of the importance of the Sony Walkman to the field of cultural studies (Du Gay, et al., 1997), an exemplary technology that after a mere 14 years seems archaic: Many younger people have never heard of a Walkman, and have no idea what a cassette tape is. Moreover, this rapid pace of development of literacy technologies is increasing, with little to suggest it is going to slow down long enough for researchers to get a good, long, analytical look at the current media environment.

## The alphabet is no longer enough

But we cannot attribute the lack of knowledge entirely to the rate of technological change. Another possible cause for this aporia in the field of literacy is the sheer ubiquity – particularly in wealthier nations – of new literacy technologies along with increasingly multiform applications of reading and writing. Simply stated, the alphabet is no longer enough. One needs facility with creating images, digitizing photos, recording voices, making videos, maintaining networks and so on, should one wish to keep up with all the multiliterate "affordances" of contemporary media. Hence the literacy scholar is now required to be something of a polymath, adept at not only under-

standing the use of language as one sign system, but also knowledgeable about the wide range of semiotic systems, and, I would argue, about the machine languages and codes that are constantly running in the background, shaping our experiences with texts and moulding the forms of our expression. The most complex aspect of this new media ecology is that most of it is unseen and unknown to the users. The easier our communication tasks become, the better; however, the simplicity of user interfaces – while improving user experience and capabilities with digital devices – also serves to conceal an ever-more complex and deterministic role of automation in literacy practices, with increasingly profound effects on both the users of literacy technologies and the information environments they participate in.

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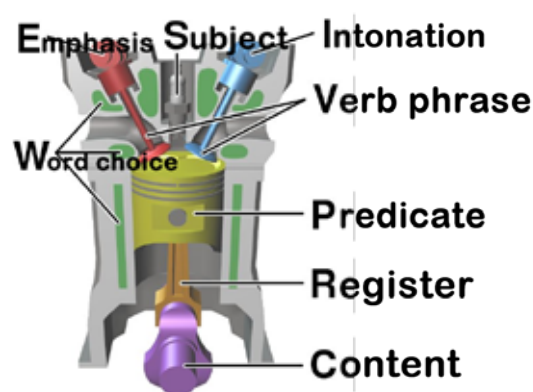
Murray and Gibson (2011) argue that one of the epistemologies of ignorance in education may be located in the dismissal of any serious, critical attempt to take up where McLuhan leaves off, namely with the warning that "electronic man must know the effects of the world he has made above all things" (McLuhan & Fiore, 1967, p. 90). It is difficult to ascertain these effects in part because "environments are invisible. Their ground rules, pervasive structure, and overall patterns elude easy perception" (p. 85). Moreover, mediated environments are inseparable from other environments – for hundreds of millions of persons the world over, the information environment penetrates all aspects of daily life: it is around them, on them, and in them, so much so that smart phones requiring the use of hands and eyes have to be banned for drivers, as people will immerse themselves in networked information environments even while operating heavy machinery. Studies to date suggest that immersion in these mediated environments is an addiction and that some youth will suffer traumatic stress when they lose access to their phones and other network devices (see Hyman,

2013). Furthermore, the United Nations has included Internet Freedom among the list of basic human rights (see Sengupta, 2012). So it is not only the speed of technological change and its global impact that challenges literacy scholars and educators, but also the fundamental challenge network technologies present to the way we use language and literacy in all aspects of daily life.

## The automation of literacy

Until recently, literacy educators could be reasonably assured of the role they served in their communities and societies. Many studies have shown that literacy rates are significantly correlated to socioeconomic status, a pattern established from early childhood and often intractable, as these disadvantages get passed on from one generation to the next (Sirin, 2005); organizations such as the World Bank use these rates to calculate the potential of nations to overcome poverty and to pay off national debts – hence the lending of billions of dollars hinges on, among other factors, the work of literacy educators the world over. However, with an increasingly automated literacy environment, the assuredness of the position of reading and writing teachers comes into question. The automation of literacy is a game changer, in the same way that the mechanization of literacy through Johannes Gutenberg's invention of movable type was a game changer more than half a millennia ago. Mechanization of literacy fundamentally altered the way people used and taught languages. Public education would adopt the mechanical approach to literacy four hundred years after widespread adoption in the West. We still, for example, refer to the "mechanics of writing", by which we mean the way that linguistic forms are constructed to meet the appropriate communicative standards.

With automation, the language mechanics (as a euphemism for the literacy educator) are rapidly becoming obsolete. Similarly, most people who drive cars today are fundamentally ignorant about how the engine in their car works – they take it to the repair shop where a technician connects the engine to a diagnostic computer, and the computer tells the technician which components need replacing. Already, cars are able to drive themselves more safely than humans do. So why do we need driving schools? Get in, tell the car your destination and off you go. With this change, a whole sector of employment is devolved and driving literacy is automated beyond our control.



"Mechanical Literacy" – © 2013, Kedrick James

In an automated literacy environment, we might witness a similar phenomenon. It is precisely the mechanical aspects of language – spelling, word use, sentence construction, grammar, formatting and so on, that are the first things to be automated. As I type this, my automated assistant adjusts misspellings and typos, it alerts me to sentence fragments and comma splices, and so on. Even passive voice, a mainstay of English for academic purposes, backfires. While texting a mobile phone message, the automation is more pernicious, insisting on changing words. The automated intervention in phone texting, a rapid message format, leads to very funny exchanges (there are thousands of examples online...with dedicated sites – perhaps it is a transitional poetic form!) Why do children need literacy instruction if they will be communicating with and through electronic devices that can already encode speech-to-text and read them back aloud?

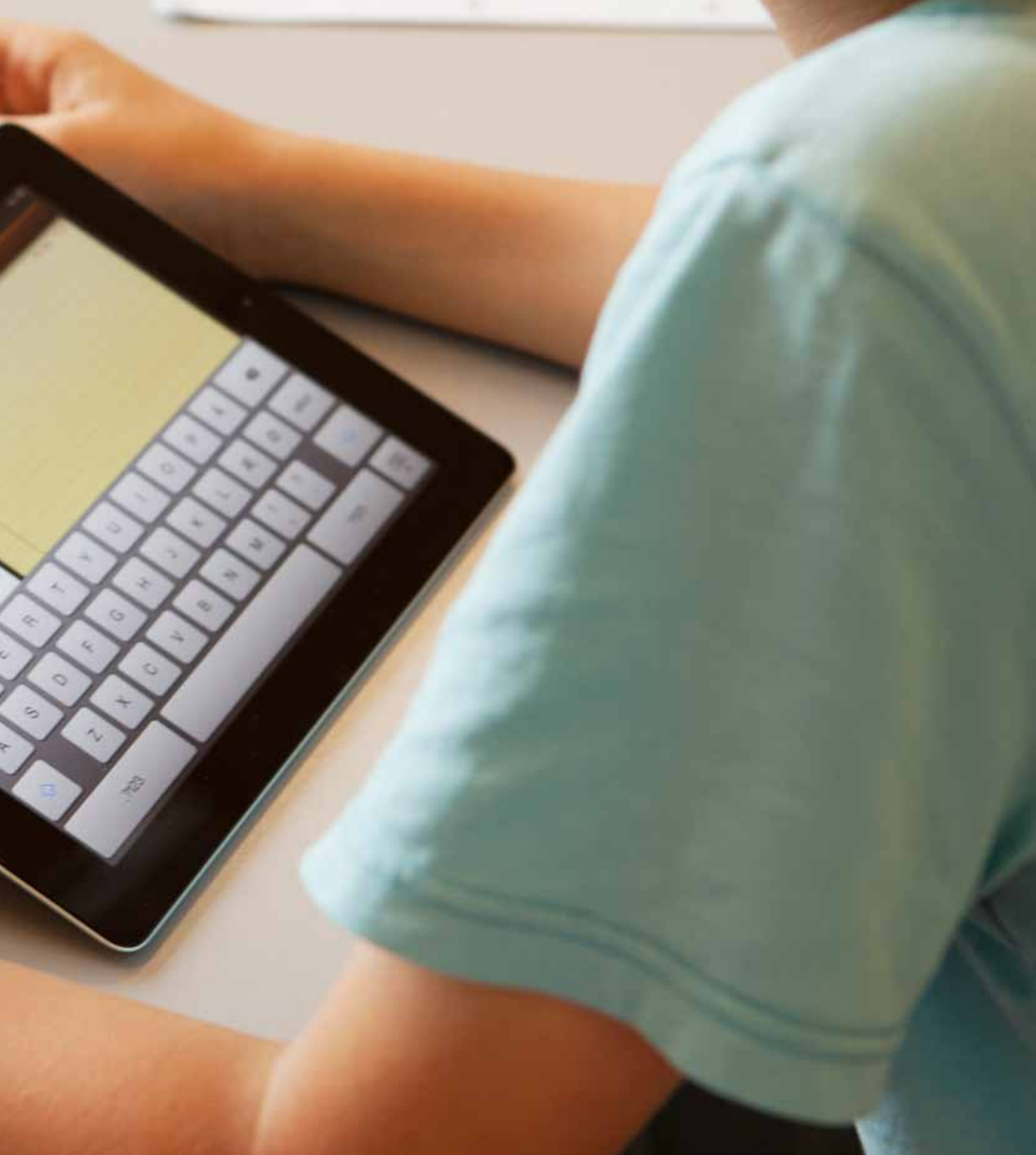
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It is not just the basic mechanical tasks of writing that are automated, however. Increasingly our reading habits and behaviours are scrutinized and automated. From search engines suggesting queries (try typing a single letter into Google search engine – see, and critically think about the suggestions that immediately appear) to the persistent advertising and scams that proliferate in every media platform, whether personal correspondence, social networking or video streaming sites, we are beset by competing pleas for attention. As Lanham (2006) suggests, a new economic model



of the attention economy becomes invested in the broader field of public literacy, and the economic "players" are industrialized, highly motivated, diverse in approach and most often very well funded, unlike most education systems. Moreover, the solitude of reading and writing is gone. Even when far from the

madding crowd, the solitary Internet surfer's moves are recorded, every site we visit, how long we visit it, how many times we return are all recorded in massive network databases. There is no anonymity: these data are packaged and sold until the invasive surveillance and advertising becomes personalized, directed at



each reader and writer according to their habits, until the email spam filters know more about our writing styles and the kinds of topics we discuss than we do.

While the automation of these basic literacy practices – spelling, grammar, searching and filtering could be

seen as a boon to the overworked literacy professional tired of correcting and urging improvement with student papers, this is merely the tip of the iceberg – or the toe of the cyborg, so to speak. Increasingly people use voice recognition and speak to their computers, which translate their words into texts, simple com-



mands or complex operations. Every time I phone a large corporation or government office, I no longer speak to a person. Instead I must answer a long series of questions about the reason I am calling asked by a voice that is made to sound human but clearly is not. My answers are constrained and controlled, and if I insist on giving a non-conformist answer my interlocutor says "I am sorry you are having trouble, I'll connect you with a representative", meaning a human, someone skilled in dealing with fuzzy thinking and illogical, un-programmed responses. To efficaciously achieve my purpose for phoning, I will learn to give quick, easy answers. I am assessed, my speech is evaluated, and if I pass, I go to the next stage in the process. Now who is teaching whom? When the customer representative answers, I am asked the same questions again. I have accomplished nothing but I have contributed my data and my voiceprint – along with other key identifiers. I am being taught how to interact with automated personnel, an invaluable skill requiring clear articulation and the proper timing of utterances. Even my oral language is now in need of remediation...we are truly back to the basics.

The effects of media requires that we make room in our understanding for automated information environments and the post-personal participants in our discourses, and that we do so without prejudice or dismissal of the increasingly vital role they play in all aspects of human life and learning

What about creativity and higher order, meta-cognitive thinking? Although literacy teachers might begin with the basics and hopefully get these firmly rooted in students' minds by the time they are leaving for post-secondary education (and complaints are constantly heard from those teaching freshmen students that their basics are far from adequate), there is more to the job than pushing correct usage of a language. As students become more capacious, so teachers introduce them to works of literature and the art of writing in critical academic styles, the most obvious example being the essay. Academic writing differs from many other genres of expression as it is intentionally distanced from oral language patterns: academic writing requires particular models of organization, complex syntax, nominalization, authorita-

tive style, citations to support for points of view, and so on. In some ways, the well-wrought academic essay is the pinnacle of the long ascent to fluency from a literacy educator's perspective.

Before high school language educators get too comfortable, however, let us introduce a shining example of their immanent redundancy as well. Since February 26, 2000 when it became operational, the Postmodern Generator ([www.elsewhere.org/pomo](http://www.elsewhere.org/pomo)) has been continuously churning out essays in arch-academic post-modernist style at the rate of one essay every minute and a half (almost 10 million at the time of this publication), complete with title, name, affiliation, stylistic integrity, clever inventiveness, fresh ideas, quoted examples, and bibliography of supporting documents. To receive a student essay of this quality would warm a literacy teacher's heart, add hope to the day, and give one the sense of accomplishment that comes with inspiring a future writer to excel. But this is a case of the Sorcerer's Apprentice – for no human wordsmith could achieve this. Who can expect a person to create 10 million essays of such quality, all of which are, as the Postmodern Generator's author, Andrew Bulhak, (1996) attests, nonsense, word play, gibberish with a high academic accent, in essence, a clever hoax. But, what if automated discourse, writing-by-numbers, becomes the norm? Even the literacy professor must have cause to contemplate replacement.

The Postmodern Generator is just one of the algorithm-driven writing engines online, and it is already ancient by Internet standards. People were still using dial-up modems when it first started writing for them. Interestingly, after generating a new essay, an advertisement appears on the published page and the one I see most often is for Grammarly, a free service that offers to help you "check your writing for plagiarism and correct grammar". Even proof reading is no longer a necessary skill for literate humanity. If we accept that we have only just begun the era of automated literacy as the twilight of the mechanical age of print-based literacy sets, we might find ourselves asking, "what's left for literacy coaches, teachers, researchers and professors to teach?" At one time we could reasonably claim to be custodians of the information environment, but no more. To follow up on McLuhan's suggestions that we learn the effects of media requires that we make room in our understanding for automated information environments and the post-personal participants in our discourses, and that we do so without prejudice or dismissal of

the increasingly vital role they play in all aspects of human life and learning.

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