

## Literacy learning and technology

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Having visited preschool classrooms where children are conducting their own videoconferences, watched students access texts that they've never been able to read before with the use of a screen reader, to see children communicating around DVDs about music that they've created, tells me these are exciting times of change. And history shows that with changing social contexts, the nature of literacy, and literacy learning in general, is often redefined. With the advent of new technologies, literacy and literacy practices are changing at a pace never experienced before. The look and feel of classrooms, the role of teachers, what students learn and how they learn are all being transformed. Changes to definitions of literacy cannot keep pace with the need to adapt and acquire new literacies as they emerge. We are in an era of multi-literacies.

Whether we like it or not, research contends that 'New literacies, whether intentionally or unintentionally, impact literacy instruction in classrooms.' Bundy pointed out in his 2004 research, 'Of the responses to the many challenges facing the world, none is more important than growing the global community of the informed and questioning as rapidly as possible.' We don't have time to stand still.

The report, 'Maximising the Impact: The Pivotal Role of Technology in a 21<sup>st</sup> Century Educational System', states that it is critical that today's students be critical thinkers, problem solvers, innovators, effective communicators, collaborators and self-directed learners. To achieve such goals, pedagogy must embrace technology. Learning traditions of the past are inadequate to cope with the new unimagined literacies of the future.

According to Australia's National Goals for Schooling in the 21st Century, it is vital that students leave school confident, creative and productive users of new technologies, particularly information and communication technologies, and that they understand the impact of these technologies on society.

New literacies, however, cannot ignore foundational literacy and literacy skills. Skills such as comprehension, phonics, vocabulary, phonemic awareness, writing and spelling are still vital to how we move forward in the area of literacy. These skills are key to how learners adopt and adjust to new literacies of the future.

We can't ignore the social context in which change is taking place. Donald Leu and his associates point out that changes in how literacy is defined and taught must be considered within today's social context. He identifies three forces at work to change the nature of literacy. The first is the global economic competition. Secondly, the rapid emergence of the Internet. And thirdly, public policy initiatives by governments around the world.

The ever-increasing demands for a technological-savvy and literate workforce have ramifications for literacy instruction in classrooms. In summary, Leu, Kinzer, Coiro, and Cammack point out that students of the future will need to be able to do many things, including: apply problem-solving skills; identify problems and seek solutions; locate information relevant to the problem; critically evaluate information and sort out accurate information from inaccurate information, essential information from non-essential; look for biased information and unbiased information. But more than that, they need to be able to synthesise information and rapidly and clearly communicate solutions to others.

In today's world, it's important that learners become discerning users of the Internet, search engines, websites, etc. They need to be participants of social networking sites, but they need to be able to scrutinise the complex maze of information. They need to be strategic and critical explorers. And they have to be mindful of cyber-activism. At the 2003 UNESCO-sponsored meeting of Experts on Information Literacy, which was held in Prague, the claim was made that people are information-literate who know when they need information, and then are able to identify, locate, evaluate, organise, and effectively use the information in order to address and resolve personal, job-related or broad social issues and problems.

So, defining literacy in today's context could be seen as an elusive task. New technologies for information and communication continually appear and still newer literacies emerge. As Leu and Kinzer point out in their research: 'Literacy, therefore, may be thought of as a moving target, continually changing its meaning depending on what society expects literate individuals to do. As societal expectations for literacy change, and, as the demands on literate functions in a society change, so too must definitions of literacy.' They must change to reflect this moving target. No single theoretical perspective has yet to explain the full range of the changes to literacy brought about by the Internet and other technologies.

Traditionally, literacy has been defined from a print-based world – a world of books, two-dimensional print and images. But a definition from the past cannot accommodate new ways of meaning making. We've never had to locate information from multiple websites, participate in audio-visual conferences, respond to emails, operate in a virtual environment, or create personal websites. These are new forms of literacy.

Readers are no longer confined to simply decoding the printed word. They're being called on to do literacy differently. They're being asked to respond to a new set of demands including authoring texts, responding and critiquing texts, comprehending information from multiple sources and from multiple perspectives. There is no set of Blackline Masters to guide their participation and determine what they pay attention to. Readers are forced to make sense of a myriad of images. They have pop-ups, hyperlinked texts and icons that just come into the text that they're reading that they may never have seen before. In that process, they're being called on to critically analyse and interpret the message; the message often within messages.

Two students can be asked to complete the same task and, in fact, access different kinds of information and come up with completely different-looking responses to the task. What they pay attention to and what they're informed by will vary according to the sources that they access. Their paths to learning about the same topic could be as

various as their conclusions. Ultimately, education has to equip them to become critical consumers of the information they encounter.

If we consider some perspectives on literacy and technology, we can't ignore the notion of critical literacies. Muspratt and others argue that it is impossible to discuss literacy without considering who's using it and for what purposes. Readers need to be critical, discerning and strategic.

If we consider literacy from a multi-literacies perspective, the New London Group advocate for two dimensions that are central to literacy: one, the multiple modalities of communication in a world where many new communication technologies have appeared. And, two, the growing diversity of culture and language within an increasingly global community. Literacy is not a single entity, but consists of multiple literacies that incorporate different cultural contexts and different communication technologies.

A third perspective from which we can look at literacy is from a media literacy perspective.

In their research, Silverblatt, Ferry, Finan and also Tyner focus on the new literacies required from new media. We haven't had to consider the role of video and images in classrooms to the same extent that we are being required to do this today. They stress the importance of analysing an author's stance and the author's motives as well as the need for a critical evaluation of the message itself.

The role of the teacher is forced to change in this dynamic context. And the International Reading Association position statement claims that literacy educators have a responsibility to effectively integrate new technologies into their literacy curriculum in order to prepare students for the literacy future they deserve.

Research indicates that teachers' pedagogical beliefs and knowledge are important factors in their quest for technology integration. It's not uncommon for students to know more than teachers about new literacies. Research by Chandler-Olcott and Mahar states that: 'Increasingly, students are coming to school more literate in the new literacies of ICTs than their teachers. In the future, students' knowledge will be central to curriculum. They will be called upon to collaboratively share and use what they know about technology and this will be used to shape classroom literacy practices.'

We have a changing pedagogy. In a classroom of twenty-five students, there will be diverse levels of knowledge and understanding about multiple literacies. And while some students may be experts in digital videoing, others may excel at creating web pages. Others may excel in different domains. No one person can be familiar and expert in all new literacies. And to teach these directly to others in a traditional classroom context would be unfathomable.

Keeping abreast of new updates in word processing programs, for example, is difficult enough, let alone to become familiar with all the multiple forms of technology available and all the software programs that accompany those. Classrooms need to become

collaborative communities in which students exchange and share their understandings of new ways of doing learning.

Another consideration is that within technologies themselves, information is frequently collaboratively constructed. Learners co-construct meaning through the use of blogs, threaded discussions, interactive chats. This collaborative construction allows learners to take advantage of what others know and what they want to understand.

So what are some considerations?

The first one is that acquiring literacy is more than providing quality software. It's important to stress that simply using technology in the classroom does not mean that students are acquiring the new literacies that will be essential to their future. Mastering a software program does not ensure that essential skills and strategies for making informed decisions and literate choices are forthcoming. Learners really do need to be thoughtful, thinking consumers of knowledge. We have to move beyond thinking of them as passive participants of a software program designed to do little more than what a workbook page would do.

Hattie points out that in his research that it is the teacher, rather than resources or policies, that has the most profound impact on student achievement. Resourcing and policy initiatives therefore must engage with and support classroom teachers to really rethink what they're doing in classrooms to shape and revolutionise digital futures.

In their separate research, Solomon and Lebo claim that the Internet is a reading context where digital-divide issues abound. From their research, it's apparent that advantaged students have far greater Internet access at home than disadvantaged and minority students.

In addition, Warschauer expresses the concern that those who have greater access to the Internet at home have consequently greater learning opportunities.

They can spend more time reading and playing on the Internet and hence have greater chance of mastering skills, such as comprehension and vocabulary. Accessing the web at home allows an individual to play in the digital world, to experiment and explore, to skip from web page to web page and to take their own trail through literacy learning.

In the area of assessment, questions arise that have not had to be considered in traditional pedagogies. How do we assess students for sharing their knowledge and expertise with others? How do teachers grade participation in chat sessions and value the contributions to moving a conversation beyond where they thought it was going?

In conclusion, what will it take to move classroom literacy practices and instruction into the 21<sup>st</sup> century? It will take teachers who are skilled, excited, passionate about the effective use of ICT for teaching and learning. It will take a curriculum that integrates new, exciting literacies and instruction. It will take courageous and bold initiatives that include yet unimagined information and communication technologies and these will result in the development of unimagined new literacies.

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