

Rethinking the
DEFINITION
of
LITERACY

Understanding the impact of globally connected technologies on modern readers and writers.

BY AUDREY WATTERS
www.modernlearners.com



RETHINKING THE DEFINITION OF LITERACY



Literacy, defined most simply, is the ability to read and write. Education policies and practices have long viewed literacy as an absolutely crucial skill that all students must acquire, and education research has recognized literacy as foundational, contending that reading is the primary way for students to access and accumulate knowledge.

Increasingly, we've come to find this simple definition of literacy — “the ability to read and write” — to be inadequate, incomplete. It fails, for example, to convey the power — economic, political, social, and cultural — that comes with literacy (or the lack of power that accompanies illiteracy).

Writing in his 1993 book *The Children's Machine*, Seymour Papert challenged a mechanical view of literacy:

“ Thinkers who try to look more deeply into what education means have written scathingly in criticism of the idea that illiteracy can be remedied by teaching children the mechanical skill of decoding black marks on white paper. Much more is involved. Paulo Freire enjoins us not to dissociate ‘reading the word’ from ‘reading the world.’ Becoming literate means thinking differently than one did previously, seeing the world differently, and this suggests that there are many different literacies.”

Over a decade since the publication of that book, schools still struggle to recognize “many different literacies.”

For its part, UNESCO [defines literacy](#) as:

“ The ability to identify, understand, interpret, create, communicate and compute, using printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society.”

And while this does point towards a much more sophisticated sense of literacy, even this definition, now a decade old as well, fails to articulate how literacy is changing in an “information age.”

And literacy is changing — perhaps quite fundamentally. Papert argues, we need to look beyond mere “letteracy,” that is beyond “the special skills involved in reading words made up of alphabetical letters.”

For Papert, the development of computers — and ideally, computers placed in the hands of every learner — means we must rethink schools’ singular focus on “letteracy” in order to help students towards a broader and more empowering form of literacy and an understanding of the world around them.

Are schools re-examining what literacy means today? Do they recognize that the simple definition of “reading and writing” is no longer enough? Are they fostering new literacies among not only students but the entire school staff?

In this whitepaper, we’ll examine those questions and more, and we’ll take a look at the complex yet urgent drivers that are requiring educators at every level to reconsider traditional ideas of literacy and to re-envision what literate readers and writers in the modern world must be able to do.

We must rethink schools’ singular focus on “letteracy” in order to help students towards a broader and more empowering form of literacy.

NEW TECHNOLOGIES, NEW LITERACIES



Expanding our definition of literacy beyond “literacy” isn’t meant to negate the importance of reading and writing. Nor should it diminish the incredible work necessary to improve literacy rates across the world, where approximately one in 5 people remain illiterate (two-thirds of those being women). Nevertheless, it’s increasingly apparent that new technologies are prompting us to look more closely at what reading and writing “look like” -- now and in the future.

Take text-messaging, for example, a hugely significant medium of communication globally. Text-messages often use special shorthand (LOL for “laugh out loud”; OMW for “on my way”; and so on); some use “emojis,” ideograms and smileys that stem from in Japanese text messaging. On one hand, it’s easy to dismiss this as beyond the scope of a school’s literacy efforts; but on the other hand, if this is how people (and not simply youth) communicate, it seems like fair game for discussion rather than simply an outright dismissal. (It’s interesting to look at text-messaging, for example, in light of the UNESCO definition of literacy, particularly as many business, banking, and civic services are using text messages to communicate too.)

New digital platforms are extending our communication abilities, but they're altering them too; we now often blend text, sound, and imagery when we communicate.

Texting is just one example, of course. “New literacies” that arise from new technologies include things like blogging, social networking, podcasting, video making, and game-playing and game-making. New digital platforms are extending our communication abilities, but they're altering them too; and as emoji’s show at a very simple level, we now often blend text, sound, and imagery when we communicate through these new tools. That means that, although frequently rooted in older, “offline,” and “print” practices,

these technologies do change what it means to both “read” and “write” texts. (They change the meaning of “text,” as well.)

New technologies create new literacies.

And in turn, we must respond: the need to develop new literacies, particularly in this moment of rapid technological change, places new demands on all of us — not just on students. We are all expected to read and write in these new ways in order to participate fully in personal, professional, and civic circumstances.

Broadly, thanks to these new information technologies, we’re now expected to move much more quickly to identify problems; to know where to find information to help us address those problems — often on our own; to evaluate and synthesize information from a number of sources in order to try to solve those problems; to communicate with others about problems and potential solutions; and to monitor the solutions we’ve found and stay up-to-date with new issues as they arise. This is a much more complex exercise than knowing how to read or write, or even than knowing how to conduct (traditional) research.

We are increasingly expected do all these tasks via the Internet, of course, in order to fulfill elements of our professional and our personal lives. We do this as students, teachers, workers, and citizens alike.

No doubt, it’s still useful to think about how many these new literacies do dovetail with that UNESCO definition too: to identify and interpret materials. But it’s important to consider how do these

practices, particularly when they're online, shape comprehension and interpretation in new ways. How do these new practices shape community participation in the construction of knowledge?

For educators, this must involve a more sophisticated response than the Internet is “good” or “bad.” It's about thinking about how students "move through" materials as they read and research and how digital materials make that a fundamentally different process.

FRAMEWORKS FOR NEW LITERACIES

There are many different frameworks designed to help identify and promote new literacies. (But to complicate things, some offer competing definitions).

An abbreviated list could include:

- Digital Literacy
- Media Literacy
- Web Literacy
- Computational Thinking
- Computer Literacy
- Coding Literacy

New digital platforms are extending our communication abilities, but they're altering them too; we now often blend text, sound, and imagery when we communicate.

There is no agreed upon definition for many of these, and that does make it challenging for schools to examine their own literacy initiatives. But there is a shared sense across all these definitions that new technologies — computers and the Internet specifically — are changing the skills that a “literate person” must possess. These include, quite broadly, the ability to use computers and computer networks; an ability to engage in online networks (and to understand the behavioral norms of online networks); to be able to use networks

to find and evaluate information. In this way, we can see that the idea of “digital literacy” builds upon earlier notions of [media literacy](#), that is, it helps to give students a deep understanding of how to read and write and analyze media messages.



But here's where both "reading" and "writing" start to become inadequate verbs to describe what students do when they work with new media. Media involves film, for example. It involves games. And increasingly it involves understanding how to work not only in the language of humans — in visual, spoken, or written form, but in the

language of computers.

There's has been a concerted push for more and better computer science curriculum in recent years, with groups like Code.org www.code.org leading the charge to have more students exposed to programming. Indeed, many contend that programming knowledge will be necessary for many jobs in the future.

Some argue that, instead of focusing on computer science, we should think more broadly about [computational thinking](#) and/or algorithmic thinking. As CUNY professor Cathy Davidson writes in support of the latter:

“ I have a basic literacy to add to the last century's 3 R's of “reading, 'riting, 'rithmetic.” Let's add a 4th R: “algoRithm.” (Yes, I know that's a fudge, but writing and arithmetic aren't perfect either.)

Let's start emphasizing our 4th R in kindergarten, even preschool, since, like the other literacies, algorithmic thinking is foundational. Wikipedia defines “algorithm” as “a set of rules that precisely defines a sequence of operations.” It is a step-by-step approach to calculation. You use algorithms to program a computer or for Webcraft. It is almost the opposite of bubble-thinking. It provides an alternative to fact-based mastery and proposes, instead, iterative, process-oriented, constructive, innovative thinking.”

The Mozilla Foundation has made a major effort recently to support work around “Web literacy” as part of the organization’s broader efforts to “promote openness, innovation and participation on the Internet.” Its “[Web Literacy Map](#)” is probably one of the most useful and thoughtful frameworks for thinking about new literacies.



Mozilla breaks these literacies down into three areas: exploring (navigating the Web), building (creating for the Web), and connecting (participating on the Web). It addresses a range of sub-skills, from privacy and security to the scripting and the mechanics of the Web itself.

Two key elements of Mozilla’s literacy work: the emphasis in the Web Literacy Map is on acquiring skills through hands-on learning. And it’s a “map,” not a predefined curriculum. It recognizes multiple paths through and to these skills; and it recognizes that, with rapidly changing technologies, we cannot set what “teaching literacy” means into stone.

SO, HOW “LITERATE” ARE OUR STUDENTS?

On the surface, students might appear to be quite “literate” when it comes to digital technologies. But it’s important to distinguish technology usage from literacy.

University of Connecticut's Donald Leu has made several important observations about new literacies:

1. Online research and comprehension is a self-directed process of text construction and knowledge construction.
2. Five practices appear to define online research and comprehension processing: (1) identifying a problem and then (2) locating, (3) evaluating, (4) synthesizing, and (5) communicating information.
3. Online research and comprehension is not isomorphic with offline reading comprehension; additional skills and strategies appear to be required.
4. Online contexts may be especially supportive for some struggling readers.
5. Adolescents are not always very skilled with online research and comprehension.
6. Collaborative online reading and writing practices appear to increase comprehension and learning.

Number 5 on this list in particular highlights how dangerous the myth of the “[digital native](#)” can be — this idea that students born in an information age are somehow naturally or automatically predisposed to understand new information technologies.

It is true that, according to [research from the Pew Research Center](#) that many US teens now lead “tech-saturated lives”: 95% use the Internet. 78% have cell phones. 80% have a desktop or laptop. 81% use social networking sites. But that doesn’t mean that they are necessarily highly skilled when it comes to these new literacies. And as Leu points out too, having “traditional” literacy skills isn’t necessarily an indicator that a student has these new literacies.

“New literacies are multiple, multimodal, and multifaceted.” — Donald Leu

NEW LITERACIES AND THE CLASSROOM



How do schools support these new literacies? How will they assess them? And how will the role of educators change with the rise of new literacies? This is particularly important as students (again, all of us) have to navigate more complex and more rich media — online and not just in print.

With a world of digital materials at students’ fingertips, traditional instructional materials like textbooks are no longer canonical. But that doesn’t mean that the role of the educator is necessarily diminished. To the contrary, educators could be even more important as they guide students through the contexts of learning materials, not simply the content. Again, as Leu points out, collaborative practices seem to help boost learning.

It's imperative that schools stop responding to new technologies by banning them. This, along with heavy-handed filtering of schools' networks, means that students do not have an opportunity to explore and develop these new literacy skills in the classroom.

But this demands a change not only in schools' Internet infrastructure and students' "acceptable use" policies. It means that educators develop these new literacies too.

Educators must develop these new literacies themselves — for themselves — before they can support students in developing them for themselves in

New literacies have profoundly important implications for educators' professional development, something that cannot be addressed by treating new technologies like blogging or YouTube simply as the latest instructional tools. Educators must develop these new literacies themselves — for themselves — before they can support students in developing them for themselves in turn. Educators must learn to engage with new technologies and the literacy practices surrounding them (by blogging, by gaming, by learning to program, and so on).

New literacies certainly create new challenges for schools, because in no small part, new technologies (and the cultural practices around them) are changing incredibly quickly. This raises important questions about how — indeed, whether — new literacies "fit" into current school practices, and how schools will respond.

MORE LITERACY READINGS IN EML

On the EML Website (www.modernlearners.com)

Doug Belshaw, "Rethinking Literacy for the Web"
www.modernlearners.com/rethinking-literacy-for-the-web

Lee Skallerup Bessette, "This is Not an Essay"
www.modernlearners.com/this-is-not-an-essay

Audrey Watters, "New Literacies in the Classroom"
www.modernlearners.com/new-literacies-in-the-classroom

Audrey Watters, "Reading and Research in the Age of Wikipedia"
www.modernlearners.com/reading-and-research-in-the-age-of-wikipedia

MORE LITERACY READINGS ELSEWHERE

Cathy Davidson, "Why We Need a 4th R: Reading, wRiting, aRithmetic, algoRithms"

<http://dmlcentral.net/blog/cathy-davidson/why-we-need-4th-r-reading-writing-arithmetic-algorithms>

Tasneem Raja, "We Can Code It! Why Computer Literacy is Key to Winning the 21st Century"

www.motherjones.com/media/2014/06/computer-science-programming-code-diversity-sexism-education

AUTHOR BIO



Audrey Watters is a journalist specializing in education technology news and analysis. She has worked in the education field for the past 17 years: as a graduate student, college instructor, and program manager at an ed-tech non-profit. Although she was two chapters into her Comparative Literature dissertation, she decided to abandon academia, and she now happily fulfills the one job recommended to her by a junior high aptitude test: freelance writer and editor. Audrey has written for The Atlantic, Edutopia, MindShift, Fast Company, Inside Higher Ed, The School Library Journal, O'Reilly Radar, ReadWriteWeb, and The Huffington Post, in addition to her own blog Hack Education. She is currently working on a book titled Teaching Machines, due out in 2014.

PHOTO CREDITS

www.flickr.com/photos/ergonomic/3363073562/sizes/o/

www.flickr.com/photos/n1ct4yl0r/12614314175/sizes/l

www.flickr.com/photos/goodncrazy/5531939787/sizes/l

www.flickr.com/photos/travis_warren123/4487186202/sizes/l

www.flickr.com/photos/56155476@N08/6660136797/sizes/l

SUBSCRIBE TO EML



EDUCATING
MODERN
LEARNERS

Educating Modern Learners (EML) is the leading independent source of news and analysis for educational leaders and policy makers who want to understand how technology is changing education and learning in powerful and dramatic ways, and who want to make better, more informed, more relevant decisions for the students they serve.

If you're interested in receiving more EML premium content like this whitepaper as well as MasterClasses, podcasts, and articles written by respected education authors from around the world, [subscribe today](#).



This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](#).