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Digital literacy and informal learning environments: an introduction

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New technologies and developments in media are transforming the way that individuals, groups and societies communicate, learn, work and govern. This new socio-technical reality requires participants to possess not only skills and abilities related to the use of technological tools, but also knowledge regarding the norms and practices of appropriate usage. To be ‘digitally literate’ in this way encompasses issues of cognitive authority, safety and privacy, creative, ethical, and responsible use and reuse of digital media, among other topics. A lack of digital literacy increasingly implicates one’s full potential of being a competent student, an empowered employee or an engaged citizen. Digital literacy is often considered a school-based competency, but it is introduced and developed in informal learning contexts such as libraries, museums, social groups, affinity spaces online, not to mention the home environment. This article recognizes and connects the ways and places we might conceptualize and realize an expanded view of digital literacy that fits today’s changing reality.

Keywords: digital literacy; informal learning; digital media

When Gilster (1997) first made the world aware of the concept of ‘digital literacy’ in the late 1990s, he defined it in educational terms, recognizing the fundamental but revolutionary uniqueness of the internet and identifying the digitally literate student as having a specific set of information skills (e.g., evaluation, searching) applied to text and multimedia information found on the internet and situated in a formal, school-based learning context. With lightning fast access to a seemingly limitless amount of ideas and information, he noted, came new responsibilities for the user. Even in its earliest conceptualization, it was clear that being digitally literate far surpassed the basic literacy skills of reading, writing, listening and speaking. With today’s digital media

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and technologies, people now can also create, work, share, socialize, research, play, collaborate, communicate and learn.

Since Gilster's initial concept of digital literacy, the term has evolved, changed, and expanded, becoming increasingly central to cultural, civic, and economic participation (Aabo 2005). With the advent of Web 2.0 tools, a participatory culture has emerged, requiring skills for expressing, creating, sharing, interacting and engaging – activities far beyond Gilster's early vision of digital literacy. But with its expanding definition, digital literacy has increasingly become what Chase and Laufenberg (2011) call 'inherently squishy'. Definitions of the term now range from simply being technology fluent to the ability to apply information literacy skills (e.g., locating, extracting organizing, managing, presenting and evaluating information) in digital environments to broader, more complex conceptual frameworks that encompass a wide variety of skills, understandings, norms and practices.

Research on digital literacy often focuses not only on what it means to be digitally literate but also on the impact on human beings of not being digitally literate. Concerns about the lack of digital access have given way to concerns about being 'digitally illiterate', i.e., lacking the skills, understandings and practices required to successfully navigate the ever-changing digital landscape. The evolving and expanding potential of new and emerging information, instructional, and communication technologies and digital tools demand that any definition of digital literacy must be fluid and organic in nature. Furthermore, what was once perceived as 'the school's responsibility' to prepare students to be digitally literate citizens is now the acknowledged responsibility of all learning spaces, formal and informal (including the home and the workplace), to ensure both preparation and continuous updating of digital literacy skills, understandings and practices for everyone from toddlers to seniors.

Informal venues of learning and development are important spaces where digital literacy is both employed and cultivated. We define informal contexts as those that take place outside of school. However, we are not talking strictly about the physical location of school so much as the pedagogical practices that demarcate formal education from the other informal places where people engage with digital technologies and literacy: the home, libraries, museums, zoos and aquariums, clubs, sports teams and online communities, just to name a few. The distinction between formal and informal spaces of digital literacy is not to put a value on one over the other; rather, we mark this divide to recognize those spaces, both physical and virtual, that are often less privileged in our scholarly discourse and, we argue, underutilized as vehicles for the development of digital literacy. A new emphasis on 'life-wide' as well as lifelong learning, a strategy to move our conception of learning beyond classroom walls, has refocused attention on informal space. These contexts are sometimes referred to as 'real-world' spaces or authentic contexts, but such labels tend to paint harsh contrasts with school-based learning, emphasizing the constraints, motivational challenges and rigid discourses of formal learning institutions.

A more holistic perspective sees informal and formal contexts of digital literacy as components of a knowledge ecosystem. Every day, users of digital technologies engage in a wide range of literacy activities, at home, at work, and in third spaces, physical and online. Mapping a bus route, finding a restaurant, online shopping, messaging a friend; this perspective recognizes the fluid boundaries of learning and literacy, and helps scholars, educators and institutional partners acknowledge the complex and interconnected nature of literacy practice. Digital literacy is not strictly about competence in school-based research tasks, it is about effectively participating in our new digital world.

This article explores the landscape of digital literacy with an emphasis on informal spaces. Along the way we pose and seek to answer the following questions:

- How do different discourse communities address digital literacy or literacies?
- What issues emerge in an ecological approach digital literacy?
- How are informal contexts contributing to the development of digital literacy?

In the first section of our article, we identify three discourses of digital literacy and the digitally literate, and discuss how these discourses derive from historically situated approaches to literacy and learning. These discourses affect how informal contexts, such as museums, libraries, after-school programs and online venues, position themselves as contributing to the development and enactment of digital literacies. In the second section, we draw from these discourses to identify key principles of digital literacy that we feel are important for informal contexts of learning. These principles may be used to develop and evaluate institutional and programmatic approaches to digital literacy, as well as aid scholars in comparing and analyzing empirical work. In the third section, we further explore several examples of digital literacy in everyday, informal contexts and how these principles might be applied to analyze these examples. Finally, we introduce the papers of our special issue, connecting and applying the discourse framework to the work of these authors.

1. Discourses of digital literacy and the digitally literate

Digital literacy is a term that has been addressed by several different scholarly and professional disciplines, often from different perspectives or discourses (Bawden 2008; Lankshear and Knobel 2008; Jones and Hafner 2012; Eshet-Alkalai 2004; Eshet-Alkalai and Chajut 2009). These perspectives are not distinct or in opposition to each other *per se*; rather, they represent three different approaches to digital literacy rooted in diverse scholarly traditions and multiple ways of thinking about what constitutes literacy, as well as how literacy is enacted in formal and informal environments. While organizing this section

of our article around these three discourses, we recognize that other organizing principles might have been chosen, and other scholars could disentangle digital literacy in quite different terms. We are using this organizing schema not to set up binaries or oppositional arrangements, but to illustrate how values, goals and institutional priorities play a part in defining (and reifying?) who is 'digitally literate'. For each perspective, we offer a definition of digital literacy and address some of the historical and scholarly foundations of the viewpoint. This multi-perspective approach is in part a response to the authors' diverse backgrounds and opinions of what constitutes digital literacy, as well as our recognition that a unified definition of digital literacy, or literacies, is yet to emerge.

1.1 *Digital literacy as the acquisition of 'information age' skills*

One perspective on digital literacy is that it represents a set of discrete abilities or behaviors expressed by the users of digital information systems, often in the process of inquiry. These abilities are often characterized as the skills of the 'Information Age', the new epoch ushered in by the ubiquity of computers, digital devices and information services in affluent Western society (Eisenberg, Lowe, and Spitzer 2004). While the technologies are contemporary, these skills may be regarded as digital 'translations' from the information literacy skill sets rooted in earlier print-based bibliographic instruction, and promoted extensively within the library and information science community. The digital literate individual, from this perspective, knows when and how to effectively employ digital resources to resolve an information need – a gap in knowledge or understanding that prompts research – as well as how to evaluate digital documents for currency, relevance and credibility. This digital information literacy perspective requires inquiry and research behaviors that address a number of value-added criteria that Taylor (1986) described as quality values, including accuracy, currency, reliability, validity and comprehensiveness. More recent elaborations have included the ability to create and share information online, in user-generated forums and social network sites.

The skills perspective is focused on user behaviors in the digital environment, and thus digital literacy may be assessed by analyzing user performance on standardized tests or in heuristic assessments of behavior. Simply put, these assessments measure a students' or users' ability to emulate the behavior of information professionals in finding, assessing and applying information, most often for academic tasks, but also for meeting information needs in daily life. The goal is to compare the learner to expert models of performance, specifically in the use of institutional systems and common research tools such as search engines.

A key attribute of the skills perspective is its concern with measurement: if digital literacy is an observable, measurable quantity, institutions can ascertain the impact instructional programs have on participants' skill level. This notion

of impact plays into contemporary concerns with accountability and the focus on programmatic outcomes. This strength is also a conceptual weakness, however. One of the challenges of this perspective is that young people's existing behaviors with digital tools are invariably found to be deficient (i.e., non-expert); this often positions youth as 'lacking' digital literacy, a condition which can only be overcome through explicit instruction from experts, namely librarians or other trained educators. Because these digital skills are based in conceptions of information literacy, and in particular bibliographic information systems, we also see vestiges of older skill markers present. For example, some measures of digital literacy would test a user's knowledge of Boolean logic, specifically the construction of search queries using operators 'and', 'or' and 'not' to provide more precise search results from databases. While this skill might differentiate more sophisticated searchers from novices, current search tools such as *Google* make this skill more arcane than commonplace. Skills instruction, particularly when it is rooted in specific behaviors rather than conceptual structures, may fail to account for the rapid changes in digital technologies.

Accounting for low levels of digital literacy among youth, proponents of the skills perspective cite a lack of motivation: the reason young people do not possess expert information skills is they lack the drive to attain them or, in some cases, they think they are digitally literate when they are not, i.e., they do not know what they do not know (Small et al. 2012). Their self-taught approach to digital literacy provides 'good enough' solutions to most problems in the digital environment. Informal contexts provide an alternate venue for skills instruction, overcoming some of the motivational challenges, often by re-contextualizing skills in terms of learner interests or providing different incentives to practice and attain mastery.

1.2 *Digital literacy as the cultivation of 'habits of mind'*

The second perspective on digital literacy that we have identified in the literature emphasizes the application of abstract mental models to activities involving digital content. These models come from various domains, but most are cognitive in their perspective, focusing on how individuals process information in the head. From the point of view of the learning sciences, we might think of these models as metacognitive scaffolds: structures that support an individual's digital literacy activities by promoting reflective thought and a heightened awareness of individual thinking on a given task or problem. These models focus on problem-solving capacities, and they are abstract enough to be applicable to a wide range of situations and contexts.

Buckingham's (2003) Media Literacy 2.0 framework serves as an example of this cognitive approach to the challenges of digital media and the mental discipline that characterizes this perspective. Buckingham's framework updates media literacy for the digital era, and emphasizes the interrelationship of four

factors in understanding new media, namely: representations, language, production and audiences. These components provide a structure for thinking about and evaluating media messages. This echoes the Partnership for twenty-first Century Skills' (p21.org) emphasis on critical thinking and analysis, expanding the notion of digital literacy beyond skill to 'habits of mind' that cross numerous contexts and task types, from determining authority when surfing the web to interpreting ideology in popular advertising.

This perspective sees digital literacy assessed in how well students apply cognitive frameworks to academic and everyday situations. As the models are fairly high level, a key challenge is that it relies on young people to transfer knowledge and procedures among contexts and problems, something kids are notoriously poor at doing. From this perspective, informal contexts can support youth development of digital literacy by giving them problem-based challenges that support practicing the application of 'habits of mind' to everyday situations and real-world scenarios.

1.3 *Digital literacy as engagement in digital cultures and practices*

The third perspective sees digital literacy as engagement in a set of practices involving digital tools and media that are deeply embedded in a particular context or activity. These practices are emergent, socially constructed and situated, rather than predetermined; they are based on what works more than what expert behaviors or prescriptive models might show. This perspective is most closely linked with the development of the 'multiliteracies' framework espoused by the New London Group and other socio-cultural scholars of literacy (New London Group 1997; Cope and Kalantzis 2000; Gee and Hayes 2011). Rather than a list of discrete skills, digital literacy is expressed in terms of the general capabilities individuals have for living, learning and working in a digital society, which recognizes the constantly changing nature of technology, and the evolving expectations we have of digital citizens. This notion that digital literacy is an evolving construct is both its strength and weakness: while it privileges a wide range of expertise and a nimble conception of the value of digital literacy in society, it is notoriously difficult to assess, and does not mesh well with the existing formal systems of certification or endorsement.

This perspective sees participation as the key to developing digital literacies. Thus, the way to better inform youth and to build their capacity is to find new avenues of participation in digital culture, and to privilege these new forms of learning. Informal contexts can develop structures for participation and engagement with digital tools and practices that lead to social learning and peer development (Smith and Hull 2013). Arguably, this perspective brings a critical turn to the examination of digital literacies, de-emphasizing skills and refocusing attention on diverse contexts of use, and the emergent modes of assessment that are bound by specific circumstances and communities of practice.

In sum, each of these perspectives illustrates a piece of what we might collectively call digital literacy. Moving beyond these discourses, our approach sees digital literacy as comprising all three of these essential elements: technology skills, critical thinking capacities and contextually situated practices. Integrating these ideas in a coherent framework is the work of the next section of our introduction.

2. Moving beyond the discourse on digital literacy

Our vision of digital literacy is based on the holistic perspective that combines skills, mental models and practices into a whole that can be identified by an understanding of certain concepts and an engagement in certain activities. As many scholars today note, skills cannot be understood out of context; knowledge is situated and embodied in very specific ways and is often applied to directed ends. To understand digital literacy in the abstract goes against the discourse of literacy – digital or otherwise – in serious ways. We join the chorus of scholars vying for a new understanding of digital literacy that is built on traditional literacy skills, but importantly encompasses an understanding and active orientation to twenty-first century socio-technical systems that stretches far beyond traditional notions of comprehension and skilled technical application.

All literacies are built on a foundation of the traditional literacy skills of reading, writing, speaking and listening. However, in today's digital, globalized world, a much broader definition of literacy is required. We are now at a moment where a range of evolving Web 2.0 technologies, tools and communication strategies can support higher level cognitive, social and technical skills (e.g., problem solving, decision making). Small et al. (2012) suggest a number of current cognitive and social networking tools that support digital literacy and inquiry skills instruction for each of the six phases of the Stripling Inquiry Model (Connect, Wonder, Investigate, Construct, Express and Reflect). For example, in the Wonder phase, they suggest blogs, *Mindmeister*, *Edistorm*, *Bubbl.us* and *GoogleDocs* templates as appropriate technology tools for supporting questioning behaviors (113), while for the Express phase, they recommend technologies such as *Skype*, *Voicethread*, *Zoho Suite* and *Glogster* to foster shared learning and creative thinking activities (114).

Moving beyond the notion of digital literacy, we posit that a comprehensive understanding of digital literacy should also involve a reflexive understanding of oneself in relation to technologies and digital services, an awareness of networked structures – both social and technical, and an understanding of the social aspects that frame much of our digital engagement in this age of social media and Web 2.0 services. We briefly outline our ideas surrounding each of these positions in the remainder of this section.

To begin, we suggest that a digitally literate person develop an understanding of themselves in relation to the technologies and services with which they

engage. Building on the work of Jenkins (2006) and others, we suggest that this conceptualization be, at minimum, one of a participatory creator. In other words, a person who is digitally literate goes beyond just being a digital information consumer to seeing themselves as someone engaged in the activity of digital information *creation*. In an age of unprecedented opportunities for digital commerce interactions, social and political engagement, and lifelong and lifewide learning and collaboration, the digitally literate citizen must be an active and ever-vigilant participant, constantly evaluating those opportunities for their benefits and their downsides.

This stance changes the way that a person understands their relationship to tools and infrastructures as well. If we see ourselves as being a part of the conversation, we want not only to make our productions coherent to others, but also easy for ourselves to produce. As such, we demand usable tools and coherently designed socio-technical systems so that we can spend time using the tools as tools instead of as ends in themselves. In this way, the orientation of a creator shifts one away from being simply a user of a technology to using technology to be an actor of some type whose tools happen to be digital. Cezanne, after all, was not a paintbrush user – he was a painter, an artist.

A slightly more radical understanding of creator is being promoted by the likes of the *Mozilla* and *MacArthur Foundations* in the USA, who are promoting a conception of digital literacy, not always under that moniker, of individuals who not only create and produce with an array of digital tools, but who also create tools and systems themselves. This flavor of literacy is gaining ground under the title of ‘hacker’ or ‘maker’ literacy, which takes its cue from the open source and Maker Faire communities around the world. *Mozilla*, known for its *Firefox* web browser, which was largely developed and continues to be maintained by a distributed group of code volunteers, has begun an initiative called *Hackasaurus* that comprises a suite of tools

that mak[e] it easy for youth to tinker and mess around with the building blocks that make up the web . . . help[ing] tweens move from digital consumers to active producers, seeing the web as something they can actively shape, remix and make better.

Understanding oneself not only as a creative producer of digital media, but also as a hacker or a maker, underscores the contention that technologies are not givens to be adjusted to and blindly followed, but, rather, are malleable, *mashable* and perpetually adaptable.

A digital literacy that encompasses the notion of perpetually adaptable technology should also promote an ethos of responsible attribution. This translates both into a need for understanding which elements are appropriate for extension, concatenation or future development and which are not. Licensing schemes aid such as Creative Commons make these decisions on the part of

creators easier because they offer clear guidelines about how the author prefers his or her work to be used. The open systems, tools, code set and hardware that form the basis for the maker community work only because of this ethos of attribution and acknowledgment.

A hacker orientation underscores a final set of points regarding an expanded notion of digital literacy that merit further conversation. The first point is the recognition that a digitally literate person should understand that their interactions exist within a socio-technical network. The technical aspect of the network, which allows for the *mashups* and other creative forms of reuse mentioned above, is facilitated by the normative use of application programming interfaces and other mechanisms that allow for extensibility and interoperability. Creators can thus easily avail themselves of the store of digital media made available by others – with attribution, etc. This access inspires the parallel move of ‘giving as well as you’re getting’: recognition of one’s membership within a larger network supports the idea that creations should be developed with an eye toward their own extensibility so they can be altered, extended, mashed up and the like with the productions of people yet to come. The awareness of the interconnected possibilities, but also one’s responsibility for maintaining connectability, is a key component of being digitally literate in the twenty-first century.

The final aspect of ‘network’ to be acknowledged within an expanded construction of digital literacy is the social one that joins digital makers, citizens and learners together. Less important is the fact that this network is structured via ties among friends, in the way that is so familiar via *Facebook*, than the way that these ties maintain themselves due to the norms and practices of an understood sociality. Recognition of the need for sharing and attribution is one such cultural norm, but there are many others such as respecting the autonomy and privacy of fellow digital citizens and supporting opportunities for openness and learning. This culture is not imposed from any central power, but rather is the result of individual choices across the web that aggregate upwards into a shared understanding of what is valued and what is not. With time and technological developments, the content of these particular norms will shift and adapt, but the need to operate collectively will continue to be an important aspect of literacy into the future.

The ideas presented here reflect an expanded notion of digital literacy that moves beyond traditional concepts of skill or information. Here, we suggest a broader view that accounts for an expanded understanding of a digitally literate person as a creative agent who operates within a socio-technical network that affords opportunities for extension, sharing and learning. The environment in which this form of digital literacy comes into play most fully is the informal environment in which these agents can express themselves most fully outside the bounds and constraints of a curricular agenda and standards.

3. Digital literacy perspective applied: a special issue highlighting informal learning contexts

This issue of *Learning, Media and Technology* emphasizes the everyday places, personal and institutional, where digital literacies are needed and employed. While the focus of our contributing authors is largely on young people, ranging from preteens to early adults, people of all ages are increasingly required to engage in digitally mediated contexts and practices. Furthermore, we recognize that digital literacies are required across the many places where we find digital tools and resources, including the changing landscape of how we access and use information for personal and professional development. Informal learning opportunities are one key to bridging gaps between digital and non-digital media, old and new practices. To cite one recent example, after a run of 184 years, the only remaining print newspaper in Syracuse, New York, *The Syracuse Post-Standard*, has decided to go digital, reducing its home delivery service of printed newspapers to three days a week and printing a smaller version available only at newsstands the other four days. This decision was predicated on the recognition that more readers today prefer to get their news online. To support this move, the *Post-Standard* is partnering with local public libraries and other community organizations to provide digital literacy workshops to senior citizens and others who may not have the skills needed to successfully access and navigate e-newspapers. However, informal learning contexts do more than just 'fill gaps' or make up a lack of formal instruction in digital skills. Informal learning is about the power of individuals to take charge of their own development, and involves a complex interplay of people, place and technology. Informal learning is, above all, complementary and expansive to that which occurs in schools and academic settings. We briefly introduce the contributions to this special issue below; they represent diverse viewpoints on digital literacies as well as showcasing the range of informal contexts where digital literacies come into play.

Jayne Lammers, in her article *Fangirls as Teachers: Examining Pedagogic Discourse in an Online Fan Site*, explores youth digital literacies in the context of a casual writers' forum. Her analysis illustrates how participants in the Sims Writers Hangout discuss their compositions and learn to write socially; along the way, they invent systems for regulating peer interactions and develop a kind of informal writers' workshop. Lammer's article shows that informal spaces for creativity and personal development need structure and a common language to sustain positive interaction. The emergent properties of the Sims Writers Hangout, including the recontextualization of other media and popular culture discourses by youth participants, illustrate a kind of digital literacy development that is largely unprivileged in formal education venues such as the classroom, but could be. Lammers notes that additional work is needed to bridge formal and informal spaces of literacy practice.

Drawing on recent US Census data, Marcia Mardis, in *What It Has or What It Does Not Have? Signposts from U.S. Data for Rural Children's Digital Access to Informal Learning*, examines the connection between broadband access and the informal learning opportunities of rural American youth. While some scholars have moved beyond issues of digital divide and access issues, for many youth barriers to digital content, in one form or another, continue to be a stumbling block to digital literacy. Mardis identifies that the majority of rural Americans have some kind of broadband (i.e., non-dial-up) connection to the internet, yet there are still households for which high-speed access is unavailable, either from a cost or infrastructure standpoint. She points to the need for better data to understand the demography of access, as well as support for informal learning through school libraries and community-based institutions.

Anne Mendenhall and her colleagues in *Scientific Inquiry, Digital Literacy, and Mobile Computing in Informal Learning Environments* describe the development of a mobile platform designed to do precisely what Mardis calls for: connect the informal learning opportunities presented in museums and science centers with the K-12 curriculum. The *Habitat Tracker iPad app*, designed for students in upper elementary grades, complements science instruction and facilitates field-based data collection and inquiry for youth in Northern Florida. Mendenhall and colleagues suggest that the app also provides a rich space for developing digital literacies, including observing, recording and analyzing data, evaluating information, testing inferences and communicating results. Tools such as the *Habitat Tracker* that scaffold directed and independent inquiry modes empower learners, extending the classroom into everyday activity (or conversely, it might be argued, extending everyday activity in the classroom).

Author Rebecca Reynolds has been looking at the use of games in the classroom for a while now, but herein reports on research comparing formal and informal contexts relative to students' creative outputs. Her article, *Formal and Informal Context Factors as Contributors to Student Engagement in a Guided Discovery-Based Program of Game Design Learning*, reports that kids who use the game and social media tool *Globaloria* are intrinsically motivated, wherever and however formal the context. This finding is a rejection of the contention that discovery-based learning is de-motivating. Reynolds' work also points out that positive shifts in self-efficacy are linked with lower parent education, which suggests that programs such as *Globaloria* might be particularly beneficial for disadvantaged students. All in all, her study holds implications for designing digital literacy interventions, particularly for out-of-school learning contexts.

In her article *Informal Learning on YouTube: Exploring Digital Literacy in Independent Online Learning*, Elaine Tan investigates what it means to learn using *YouTube*. Her work spawns from a study of *YouTube* in the classroom, but here she shows that students engage in self-directed, independent forms of learning that involve searching, selecting and sharing content with one

another. Tan tries to ascertain how students themselves view the educational value of *YouTube's* videos and, following this lead, describes how attempts their attempts to repurpose content for learning effects community formation and informal peer learning.

Finally, Underwood and colleagues write about digital literacy within a network of after-school programs in California called University-Community Links (UC Links). Their article, *Getting It Together: Relational Habitus in the Emergence of Digital Literacies*, discusses the construct of 'relational habitus' – or the configuration of self, tools, tasks and others in a specific activity – that informs collaborative activities among university and K-12 students. The authors contend that the distinctive relational habitus of the UC Links program provides youth learners with a cognitive platform that enables their development of digital literacies and supports their engagement with various new media tools.

We think this collection, diverse and wide-ranging in approaches and empirical detail, begins to develop an understanding of digital literacy that can inform pedagogies, designs and investigations in the years to come. We look forward to future authors and editors showcasing additional work to complement this vital first step.

4. Conclusion

Digital literacy, a term coined a mere 15 years ago, continues to defy a clear definition in part due to the fast-changing social and technical reality, where the products and services most popular today may not exist a decade hence. Glistler wrote about digital literacy before *Google*, before *Facebook*, before *YouTube*; yet, these online tools and their associated practices – online inquiry, social networking, e-learning – are integral to the way we think about living, learning and working in our digital society. The rise of 'casual learning' and communities of interest online showcase the rapid movement toward informal learning contexts, where individual agency, sociality and temporal fluidity change the nature of how people see themselves as knowledge builders and experts. This issue arrives at a point in our digital evolution where we are questioning many of the assumptions about how and where learning works. The barriers that constrained digital literacy, including access to technology, expertise and social support, are becoming a thing of the past, but new questions and challenges are emerging, including: how do we understand, assess and value new digital literacies? Can (or should) a young man learn computer science from a Stanford professor in a cyber cafe in Bangalore? We began this article by suggesting that there are multiple discourses that take different perspectives on digital literacies, then offer some of our own ideas on what we value, including agency, sociality and creativity. We suggest with this collection of papers that we are moving into a period where formal and informal contexts of learning interact and work together to create seamless learning ecologies.

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