



# Opening Access: Reading (Research) in the Age of Information

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Some years ago, education scholar and literacy theorist Louise Rosenblatt<sup>1,2</sup> (1978) adeptly shifted, to use her metaphor, where the spotlight fell in the teaching of literature. She turned the light from the poetic text on the page to the reader's experience of the poem. In the process, she convinced generations of English teachers, trained in close, critical reading of the text, that their attending to this experience could foster and deepen the reader's experience<sup>3</sup>. And while we have hardly exhausted the possibilities of learning from readers' experiences of literature, I ask that we shift the spotlight again, if only momentarily. Or rather, I ask that we, as reading researchers, step out from behind the spotlight that we now direct at the reader, and stand in the light, with our research in hand.

What, then, of this light falling on reader, scholar, and off print  the literacy landscape has altered at all in this Age of Information, it is that, among the billions of pages that now fill this World Wide Web, a substantial and growing body of scholarly work is now within reach of the desktops, bedrooms, and kitchen tables of a wide public. A number of leading scholarly journals are publishing in an "open access" format that makes their contents free to read<sup>4</sup>. To see the doors open for the reading public on this immense body of thoughtful, critical, and creative work is an exciting prospect for an educator. And yet, most journals are doing business as usual, and public access to research hangs in the balance today, as the economics of scholarship continues to sort itself out on the Internet. This is also where we come in.

What the public library movement initiated well over a century ago—bringing sets of encyclopedias, subscriptions to *Scientific American* and *Popular Mechanics*, and

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- 1 This talk was originally to be delivered after Louise Rosenblatt received a lifetime contribution award from the National Reading Conference at the 2002 conference, and while weather conditions resulted in the richly deserved award being given the next day, this essay remains dedicated to her and her work.
  - 2 Note from the editors: We are persuaded that John Willinsky's use of footnotes is an effective stylistic feature of his article even though it violates the conventions of the APA style manual, the Yearbook's accepted standard. As his manuscript is based on an invited presentation to the conference, it is a special case.
  - 3 Compare Rosenblatt to Roland Barthes in his 1968 essay, "The Death of the Author": "Here we discern the total being of writing: a text consists of multiple writings, proceeding from several cultures and entering into dialogue, into parody and contestation; but there is a site where the multiplicity is collected, and this site is not the author, as has hitherto been claimed, but the reader: the reader is the very space in which are inscribed, without any of them being lost, all the citations out of which a writing is made" (1986, p. 54). He concludes the essay with "the birth of the reader must be required by the death of the Author" (p. 55).
  - 4 Note that this paper focuses exclusively on open access to e-journals and how current online technologies can enhance the circulation of knowledge, leaving aside book publishing where the advantages are not as clear-cut ~~or the need as urgent~~. Examples of "open access" journals in the field of education include the electronic versions of  [Journal Researcher](#), [Teachers College Record](#), and [Research in the Teaching of English](#), if some time after initial publication, while a dedicated e-journal like [Reading Online](#) is open to the world, offering IFWA ("immediate free Web access"). For a hyper-linked list of ~~close to~~ 100 open access journals in education, see <http://aera-cr.edu.asu.edu/links.html>.

shelves of non-fiction sections into neighborhoods and communities—has taken another great leap forward with new home access to the *British Medical Journal*, *Educational Researcher*, and other open access journals. As students of literacy, we now have to reflect on what the *common reader*, to use Samuel Johnson's phrase, will make of this body of knowledge. And before you glibly respond, "little or nothing," I ask that you hear out the role we as reading researchers have to play in improving the quality of public and scholarly access in this new medium.

We not only know a thing or two about reading, we have long devoted ourselves to increasing public access to the written word, in all of its forms. We stand within a tradition that upholds literacy as critical to democracy and to participation in the larger world of knowledge. That world has been changed in recent years, as public access is now available to forms of knowledge in which we, as scholars, put great stock.

Up to this point, the *digital divide* has been largely about hardware. Governments and philanthropies have responded by equipping public libraries and schools in otherwise impoverished communities in the United States, while plans for connectivity in developing countries are now about next-generation communication infrastructure<sup>5</sup>. However, as prolific scholars and reading researchers, we are implicated in a secondary digital divide that is becoming all the more pressing with the spread of this technology. This divide affects health organizations in Indonesia, university students in Kenya, and faculty members in Argentina (Edejer, 2000; Zielinski, 2000). It reduces the effectiveness of anti-poverty organizations in Vancouver, Aborigine organizations in Sydney, and union organizers in Washington (Williams, 2002). It limits the education of science fair participants in Wichita and high school history teachers in Charleston. It stymies the curiosity of astronomy club members and amateur oceanographers. Just as a vast, rich world of information is within a click or two of most phone jacks, the toll gates are going up around online scholarly research.

I do not want to overstate the importance of this knowledge divide. It is by no means as critical to the well-being of the world as the current UNESCO goal of having universal education in place by 2015 (Sperling, 2000). Open access to research is a matter of public education only in its broadest sense. Still, the knowledge it represents may help others in their efforts to achieve important humanitarian goals. Yet what is vital and urgent about open access is that the very move to this medium now taking place has opened the possibility of new publishing models. This moment can easily pass by, out of a lack of concern and because it is always easier to do business as usual. This is one decision about the digital divide that is directly and immediately in our hands. What is missing from current discussions of open access publishing, however, is what this access might mean for common readers, democratic citizens, and lifelong learners.

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5 For example, Bill Gates' Carnegie-like efforts to provide Internet access to every public library in America has reached the 95% level at a cost of \$250 million (Egan, 2002). In Cameroon, the universities are establishing satellite Internet hookups that will replace the faculty's current dependence on Internet cafés (Sutcliffe & Charles, 2002). Also see, Digital Divide Network (<http://www.digitaldividenetwork.org/>) and PowerUP: Bridging the Digital Divide (<http://www.powerup.org>).

*Open Access*

It is not that I imagine information is, or somehow *wants* to be, free. It obviously costs a great deal to conduct research, as well as to write, edit, review, and prepare it for publication. Yet this considerable investment in knowledge, often supported by public funds, is not what is curtailing public or global access to this knowledge. The results of a research grant, a professor's time reviewing an article, another's in editing it, amount to a public contribution to knowledge paid for by the universities and granting agencies, without expectations of cost recovery from the immediate results of the research. No, the one expense that restricts access, and keeps readers at bay, is the management and publishing of a scholarly journal. These costs are ostensibly reflected in the steadily increasing subscription fees that have fostered the oft-remarked "crisis in scholarly publishing," marked by years of corporate mergers and journal acquisitions among commercial publishers<sup>6</sup>.

Taking a journal online can change all of that by reducing and redistributing management and publishing costs. The journal can use free software that automates much of its management, publishing, distribution, and indexing. It can be hosted by the university library where it is edited, as the library already maintains the requisite infrastructure (servers, operating systems, and Internet connections)<sup>7</sup>. Looking down the road, university libraries can see that as more of them take on this responsibility, their serial budgets will feel some relief. The reduced-costs argument, however, is necessary but not sufficient for convincing journal editors or scholarly societies to walk away from the subscription model and turn their journals into open, public resources. In recognition of that point, this paper deals with what reading researchers can contribute to the requisite change of mind, heart, and habit. At this critical juncture for scholarly publishing, as the academic journal stands poised with one foot still firmly bound in print and the other browsing in cyberspace, we have an opportunity to change the relationship between public and academy, between reader and researcher.

The arguments for publishing research in an open access format have seldom taken account of the common reader, dedicated amateur, or working professional. It has all been about breaking the grip of commercial publishers and restoring the ability of research libraries to keep up, with some recognition of a need to assist colleagues working in

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6 On the growing profitability of Reed Elsevier, the leading academic journal publisher, see Morais (2002). On the recent takeover of Kluwer Academic Publishers by venture capitalists, see Poynder (2002). The rising price spiral also reflects how declining subscriptions, resulting from increased costs, cause journal costs to be borne by fewer subscribers, leading to a price increase.

7 Stevan Harnad presents the case for open access forcefully and clearly: "The difference between free and fee-based access is the difference between a seamless, completely interlinked learned literature at the fingertips of every scholar and scientist in the world and a jerry-rigged agglomeration of toll-ridden proprietary packages—the on-line counterparts of exactly what we have now in the trade world of scholarly paper journals, funded through Subscriptions, Site-Licenses and Pay-Per-View" (2002). On the economics of open access publishing, see Willinsky (2002), while for open source software for research, see Open Journal Systems (<http://pkp.ubc.ca>), Eprints (<http://eprints.org>), and Citebase (<http://citebase.eprints.org>).

developing countries<sup>8</sup>. Yet open access to research, as a source of public knowledge and understanding, seems tailor-made for reading researchers to consider. Think about it. We seek to extend reading capacities. We believe in the democratic and intellectual value of expanding public literacy. We are the ones to make the public case, just as we are the ones to facilitate it in the design of new information environments, which I deal with directly here, and the education of a new generation of readers, which I do not, except by implication.

Now it needs to be clear that open access to journals is critical to the public's ability to consult the research. If online publishing were to reduce subscription prices substantially, it would greatly improve the ability of research libraries in the developed world to keep up with the Age of Information. However, it would make no difference for the public or those working in the developing world. Any price placed on reading this research effectively closes the door to this knowledge for them. It also closes the door for government policymakers, keeping them from consulting the full range of relevant research, according to the sample we consulted of high level policymakers in the Canadian government who are otherwise increasingly turning to online resources (Willinsky, 2003).

While the economics of access to knowledge has rarely been the concern of reading researchers, here is a chance to weigh in on the side of greater public literacy when it comes to this struggle between commercial and open publishing models. We only have to consider what the printing press eventually did, if all too slowly, for public literacy, while realizing that this growth only took place through the concerted efforts of those committed to such innovations as public libraries and public education. Our interest in open-access publishing is all about how it may open the door to new worlds of learning for readers—as citizens, policymakers, professionals, activists, patients, clients, dedicated amateurs, and simply curious individuals who have always wondered about the psychology of reading or the motion of the planets<sup>9</sup>.

In establishing that this public use of research is not as unrealistic as it might seem at first glance, I have offered in the past the example of the U.S. National Library of Medicine. In creating open-access indices for life sciences research, the Library has had to respond to a largely unexpected expression of public interest in medical research. It has done so by creating MedlinePlus, a service that now provides not only statistics, dictionaries, and the latest news about clinical trials, coping strategies, prevention,

8 For example, see David Solomon (2002): "At the heart of the debate is the question of who will control the literature and how it will be financed. The serial pricing crisis has stretched library budgets to breaking points and effectively cut the developing countries off from the scientific literature."

9 And while some insist on distinguishing between information and knowledge in considering this new technology (Roszak, 1986), my concern is with improving the quality of access to scholarship, though this scholarship will stand as mere information for some and rewarding, consoling knowledge for others. As for what is meant by knowledge in this context, see Alexander, Schallert, and Hare (1991) on the 25 different ways in which the term has been used by literacy researchers, according to their survey of the literature. In response to their call for greater precision in the use of the word, I would identify the circulation of knowledge as the qualities that are at issue with open access publishing.

screening, and treatment programs, but also full access to the PubMed research index<sup>10</sup>. My argument has been this: why should there be any less public interest in what can be learned from the study of education, law, and psychology, or for that matter, I would add, astronomy and zoology?

It is heartening, for example, to read Timothy Ferris' *Seeing in the Dark: How Backyard Stargazers are Probing Deep Space and Guarding Earth from Interplanetary Peril* (2002). Ferris not only celebrates the accomplishments of amateur astronomers, he points to the "flourishing of amateur-professional collaborations" (p. 51) that extend to global communities, with one, for example, coordinated by Columbia University's Center for Backyard Astrophysics, another enabling amateur access to major telescopes, including the Hubble Space Telescope, and a third involving middle and high school students. With perhaps ten times the number of professionals, the amateurs are providing observational data and often making real discoveries for the professionals' theorizing and follow-up. Due credit is not always given, according to some of the amateurs Ferris interviewed, but shared interest and commitment remains the driving force. The key to the scale of this contribution and collaboration has been the home computer that enables amateurs to record and measure, as well as connect globally and consult astronomy databases and research papers. The results show up in the astronomy journals as well as feeding the general levels of interest and understanding of the oldest of human sciences through clubs and popular science writing.

In an extended, laudatory review of Ferris' book, physicist Freeman J. Dyson (2002) asks, given this amateur impact on astronomy, which science "is now ripe for a revolution that is giving opportunities for the next generation of amateurs to make important discoveries" (p. 4). Dyson speculates that botany and zoology may be two areas ready for great amateur gains, before concluding that "we may hope that amateurs in the coming century, using new tools that modern technology is placing in their hands, will invade and rejuvenate all sciences" (p. 8). Despite the mixed imagery of invasion and rejuvenation, Dyson's vision of creative collaborations closely resembles what we have long sought in education through action research and teacher-as-researcher approaches (Zeichner & Noffke, 2001).

Where Dyson addresses the question of what this greater public access possibly can do for research, my focus up to this point has been largely on what this access can do for political, educational, policy, and professional matters. Whether to provide the solace of knowing more about urgent issues of health or to encourage a more collaborative approach to research, let me show you now how literacy research might inspire this quest of improving access to knowledge.

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10 MedlinePlus is available at <http://medlineplus.gov/>. A recent Pew Internet Project report (Horrigan & Rainie, 2002) indicated that 60% of Americans had Internet access, of which 81% expected to find "reliable information about health and medical conditions online," while 45% of those who did not have Internet access also saw the Internet as a reliable source of this information.

*The Relevant Literacy Research*

Rosenblatt (1978) has written of reading poetry that “the text becomes the element of the environment to which the individual responds. Or more accurately, each forms an environment for the other during the reading event.” This is, in her words, “a transactional phrasing of the reading process” (p. 18)<sup>11</sup>. We have now to carry this transactional phrasing that would make sense of how readers find a way through the thickets of a single verse of Emily Dickinson into the treacherous, heavily forested environs of the Internet. And in doing so, we have to move along the continuum that Rosenblatt identified, between aesthetic reading, concerned as it is with transactional reading, and the *prêt à porter* efficiencies of efferent reading<sup>12</sup>.

My interests lie, obviously, in the reader’s experience of efferent texts. I am concerned with advancing transactions between scholars and readers. In considering how readers could go further and deeper in their experiences within this new information environment, I begin by briefly introducing parallels and contrasts with current reading research, including the literacy and technology work, or the learning-from-text and out-of-school literacy research. I will then consider one specific environmental device that we are testing that is based on the context clues research and midrash literary theory.

Reading researchers have proven themselves quick to respond to technology’s impact on reading (e.g., Leu, 2000; Reinking, McKenna, Labbo, & Keiffer, 1998). They have noted, for example, how hypertext can “enfranchise” students through a new architecture of engagement with ideas (Tierney & Damarin, 1998; Tierney et al., 2000). Researchers have identified new educational paradigms within this technology that position *access to information against imposition of learning* (Lemke, 1998). They have observed that the very nature of literacy is continuously being redefined by these new technologies, suggesting the broadest of impacts (Leu, 2000).

What these researchers would do for students in schools, I would have us do for the common reader. When Leu (2000) advocates a “transactional stance,” in the Dewey-Rosenblatt tradition in which “literacy transforms the technology” (p. 744), I see the opportunity for this wider readership of the research literature transforming its publishing technologies, as the public asserts its rights to information, pushing for more accessible,

11 Rosenblatt goes on to cite Dewey’s claim that something “becomes the stimulus in virtue of what the organism is already preoccupied with” from his article, “The Reflex Arc Concept in Psychology,” in *Psychological Review*, Vol. 3, 1896, pp. 357-70 (cited by Rosenblatt, 1978, p. 17).

12 For Rosenblatt, a “perennial theoretical problem” is entailed in distinguishing between the “literary work of art and other types of verbal expression” (pp. 22-23). The resolution of the problem lies, for her, in the question of “What does the reader do” (p. 23, original emphasis). The matter for the non-aesthetic or efferent reading is the “residue after the reading” (p. 23, original emphasis). She uses the instance of the mother seeking information on the poisonous liquid her child has just swallowed. The point of contrast for the aesthetic is “what he is living through during his relationship with that particular text” (p. 25, original emphasis). On the reader’s experience of literature in hypertext environments, see Miall and Dobson (2001), who have found that “hypertext appears to promote processes of attention that inhibit the engagement and absorption that are [literature’s] most characteristic aspects.”

comprehensible, and intelligible access to valued intellectual resources<sup>13</sup>. The enfranchisement at issue in access to this knowledge is about enfranchisement and entitlement in both a political and intellectual sense.

It is not too much to speak of transforming these publishing technologies, as reading researchers have done much to transform textbook design over the years, introducing advanced organizers, strategically placing questions, hint boxes, and concept maps<sup>14</sup>. This reshaping of the text has proven especially effective for novice readers. Yet the information architecture of cyberspace is of a different order, and as Alexander and Jetton (2000) observe, “we are already years behind in our understanding of learning under such nontraditional and nonlinear conditions” (p. 303). Even so, some have been prompted by initial studies to ask whether electronic texts “require a reconceptualization of the role of text in instruction” (Anderson-Inman & Reinking, 1998, p. 187)<sup>15</sup>. For example, the classic classroom triad of author, student, and teacher is replaced in cyberspace by author, reader, and environment. And with public access to the research literature, typical concerns with strong and weak students are transformed into a concern with ensuring that both research scientists and concerned parents find answers they seek to a common question. Yet scientist and parent share a degree of motivation and interest, even as they bring radically different prior knowledge to their questions, prior knowledge that contributes to learning in difficult and new reading domains<sup>16</sup>.

The traditional educational focus on students acquiring an ever-greater domain expertise is transformed by this open-access project into three types of intellectual activity that will take place within the realm of published research. First, the scholarly community will continue to seek to extend its domain expertise while receiving more support in making critical evaluations of the studies examined in relation to this larger field. Then, we might envision a second level made up of professionals such as engineers, dentists, or teachers consulting the related research to their work, as well as dedicated amateurs with interests in everything from entomology to etymology, all of whom seek to augment their basic domain expertise. And finally, there is the prospect of a public browsing the vast

13 While Leu (2000) speaks of how “each technology contains different contexts and resources for constructing meaning and requires somewhat different strategies for doing so” (p. 749), I want to set his own transactionalism against this techno-determinism and say that technologies do not contain anything. Instead, we are responsible for constructing those contexts and resources.

14 For example, Sorrells and Britton (1998) write of efforts “to improve the learnability of textbooks and the overwhelming majority of those methods, when empirically tested, have been found effective” (p. 95). Some methods, they point out, require large efforts for small gains, against which they demonstrate how explicitly identifying “the point of a text” for the reader can make a significant difference.

15 Anderson-Inman and Reinking (1998), in their work at the Center for Electronic Studying, have found that electronic tools, text enhancements, and supportive resources can “support and promote information manipulation” (p. 186), as well as help students better process and organize information.

16 Of the three factors identified by Murphy and Alexander (2002) as critical to their Model of Domain Learning, “which stresses the interplay between knowledge, interest and strategic processing” (p. 210), interest plays an indirect role compared to subject matter knowledge or strategic processing. Interest is broken down into individual interest, marking “a long-term investment,” and situational interest, or “temporary arousal” (p. 199). Both of these apply in the case of public access to research. For the exception in an online environment, with interest in what is being read playing no significant role in either comprehension or hypertext navigation, see Mills, Paper, Lawless, and Kulikowich (2002).

reaches of research, driven by a passing interest or a need to know, as they make occasional dives deep into individual topics and studies, much like a swimmer equipped with snorkel and fins exploring a coral reef for the first time.

While each of those levels has something to learn from the literacy research on learning from text, the thread that weaves together student, expert, professional, amateur, and public is perhaps best provided by Patricia Alexander, a leading researcher in subject domain learning, when she eloquently describes that what is at risk in this work is that people will otherwise “remain the slaves to others’ interpretation of what has been written, and they will never experience the exhilaration that can come from the pursuit of knowledge or the quest for expertise” (1998, p. 280)<sup>17</sup>. The distinguishing literate quality of democracy is not so much the development of domain expertise, but rather the enhanced, sometimes exhilarating, sense of informed agency among the populace.

The literacy at issue here is still decidedly out of school, and one of the basic lessons that can be drawn from the out-of-school literacy research is that, as Hull and Schultz (2001) smartly caution, “literacy is not literacy is not literacy” (p. 583). That is, “specialized forms of reading and writing, both in school and out, have specialized and distinctive effects” (p. 583). What the New Literacy Studies (Gee, 2000) and others have found in studying these “multiple literacies” is how the rich, accomplished nature of literacy in people’s lives beyond school has a way of revealing, by contrast, the play of ideology and power within the educational construct of literacy. These researchers see the school’s often impoverished notion of literacy related to a restricted political sense of engagement, one they want to challenge with calls for more active and critical citizenship and more public forums for discourse on national and global levels (Lankshear & Nobel, 1997; Luke, 2002; Luke & Freebody, 1997). When Luke and Freebody (1997) rightly call for greater efforts to inform citizens and create public spaces, or to reinvent institutions and realign cultural and textual capital, should they not take the first steps themselves, as a demonstration of good faith? To support the critical, heteroglossic and hybrid literacy beyond schooling, why not begin by going public with our own knowledge work as scholars? The very knowledge that these scholars, as well as the rest of us, produce about learning and literacy, knowledge intended to assist democratic processes, should contribute to an expanded public sphere that could serve, if not inspire, a more active citizenry<sup>18</sup>.

These broad parallels of public purpose speak to a consistency within the reading research community. And, while there are many lessons to be drawn on this shared theme, when it came to building a practical online device that would support the common reader’s pursuit of this knowledge, we began with the very basic literacy principle of context. Readers need a more adequate context for reading research than they could

17 Compare literary critic Northrop Frye (1963) on the “desire to associate, and finally to identify, the human mind with what goes on outside of it because the only genuine joy you can have is in those rare moments when you feel that although we may know in part, as Paul says, we are also a part of what we know” (p. 11).

18 On the need for these public knowledge spaces, see Gee, Hull, and Lankshear (1996), who ask: “How should we construe learning and knowledge in general in a world where new capitalism progressively seeks to define what counts as learning and knowledge in a ‘knowledge economy’ made up of ‘knowledge workers’ doing ‘knowledge work’?” (p. 23)

otherwise be expected to muster, a context that supports not only greater understanding, but interpretation, application, positioning, evaluation, and application. Figuring out the meaning of unfamiliar words using surrounding context clues was one of the more valuable lessons I learned in my own teacher education program.

The research on reader's use of context clues has supported, if not in every instance, how context can play an interactive-compensatory role for weaker readers (Stanovich, 1980)<sup>19</sup>. And while at least one study points to how simply having students practice using context clues is as effective as giving them direct instruction on the concept (Kuhn & Stahl, 1998), Fukkink and de Glopper's (1998) meta-analysis of context studies points to the advantages of teaching this skill, as "even relatively short instruction is rewarding" (p. 462). They also point out that the first challenge in teaching context clues is helping students recognize what constitutes the relevant context for interpreting a given word. That is, readers sometimes do not have a clue about what counts as a clue.

In designing a device that would support the common reader's efforts to make sense of the world of scholarship, I have drawn from the context-clue research, albeit a body "still in its infancy" according to Fukkink and de Glopper (1998, p. 462), a need to provide readers with a sense of what constitutes a particular study's context. The experienced reader of the study reaches back to earlier studies by the authors, or brings to mind the work that this study is challenging or recalls discussing this method with other faculty not long ago. It may take years to acquire an adequate context for reading in an area of the literature. Yet the idea that there are distinct contexts that are useful for the reader to bring to the research study, including related studies, the author's other work, and informal discussions, provides a starting point for building an information environment that will support a broader band of readers.

### *A Research Support Tool*

Through the Public Knowledge Project at the University of British Columbia, we are devising new information environments for managing and publishing journals and conferences. These management and publishing systems enable journal editors and conference directors to provide each posted study with a tool that consists of a set of clearly labeled hyperlinks identifying the types of context clues available for the study. The tool also identifies the status of the study, indicating whether it is, for example, a peer-reviewed article or a non-refereed conference paper (with an explanation of the peer-review process.)<sup>20</sup> The goal of this device is to provide readers with a sense of the study's position in the literature and how its ideas and concepts, findings, and conclusions relate

19 See Goodman (1965) on the importance of context for reading fluency, and James C. Alexander's (2001) re-analysis and replication of Goodman's study that found, on the contrary, that the use of context was not significantly associated with reading fluency

20 For example, a recent study of infertility websites found that half of the 197 relevant sites did not provide even one of the four "core accountability standards"—authorship, attribution, disclosure, and currency—that were posited as essential for judging the status of the information provided (Okamura, Bernstrin, & Fidler, 2002).

to other works. Readers need to see that no study is an island entire of itself, to borrow from the poet John Donne. Each is a part of the main, and must be so interpreted.

The actual device that provides a bridge to this larger context for a given study is the size of a traditional paper bookmark. It sits in the margin to the right of each published study. It consists of a list of 10 to 15 links, depending on the subject area of the research. We might have called this device The Context Machine or Clues-R-Us, but went with the Research Support Tool. We have tested it with various research studies and will, in the coming year, begin to test what it contributes to the reading experiences of common and specialized readers.<sup>21</sup> Our working hypothesis is that a set of explicitly labeled context clues can be provided for each study that will extend the common reader's ability to find meaning and value in scholarly research.

At the top of the Research Support Tool, the study's status is identified, indicating whether, for example, it is a *peer-reviewed* article or an *invited conference paper*. Below this identification of status, links are listed that provide another perspective, a further context, for reading the study, with an explanation available for each of them. Links such as *Metadata* make the study's indexing information readily available to readers. This addresses another concern identified in the literacy research, namely that inexperienced readers have difficulty identifying the significant concepts, separating core ideas from the noise, around which to associate related points and arguments (Alexander, Pate, Kulikowich, Farrell, & Wright, 1989). Links such as *Define Terms*, *Other Works* (by the author), *Related Studies*, *Related Theory*, *e-Journals*, and *Online Forums* lead to open access databases elsewhere. There is even a *Pay-Per-View* link for those who seek materials beyond the still-limited world of open access resources.

To ensure that only relevant contextual materials are offered to the reader we have employed a relatively simple trick. When a reader clicks on the link *Related Studies*, up pops a window by which the reader can search one or more freely available full-text or abstract databases using the first two terms that the author submitted to index the topic of the article. With a click on *Search*, the author's terms are fed into the search engine of selected research databases. This produces a list of related studies that the reader can use as points of comparison or studies to pursue<sup>22</sup>. A similar process takes place with the other links on the Research Support Tool, allowing the reader to participate in a forum discussing the topic or to read about the theory behind the study. The reader can learn more about the available databases that provide a context for the study, as well as customize the search within the databases. Readers are also led to see that the context for reading research is not always other research, especially in a field like education. The Research Support Tool uses similar search principles to scour the databases listed under

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21 The most recent version of the Research Support Tool is included in the Public Knowledge Project's free conference and journal management and publishing systems. It can be tested under Demos and Downloads at the Public Knowledge Project website (<http://pkp.ubc.ca>).

22 Those working with open-access publishing are developing ways to link an article's references back to the work cited (Hitchcock et al., 2002), while at this point, looking up the citations requires nothing less than access to a good research library. On the value of demonstrating to readers the value of the multiple search terms (i.e., a Boolean search), see Vine (2001).

*Government Policy* and *Media Reports*. The *Instructional* link checks for teaching materials on the subject. Through the Research Support Tool, readers can also make comments on the paper, as well as e-mail the author or a colleague<sup>23</sup>.

Let me offer a brief example of how the Research Support Tool works with an actual research study in literacy, by positing, as I did in first testing the Tool, an imagined group of readers whose reading of the study might be helped by having a context in which to situate it. Imagine a few parents and teachers chatting one evening at a school get-together, and realizing that they share a common concern over how Shakespeare's *The Merchant of Venice* is the only work taught in grades 9 and 10 in which Jews are identified, not to mention characterized. In such a discussion, the appropriateness of teaching about the Holocaust as an addition to the students' literature program might well come up. If one or two of them were to look online for more information on the topic, they might well come across the conference paper "Understanding in the Absence of Meaning: Coming of Age Narratives of the Holocaust" (2001), by my colleague, Theresa Rogers, that we have posted online, with permission, on a demonstration test site for the Research Support Tool (<http://pkp.ubc.ca/demos/rsttours/>).

Our imaginary readers of this study might find its contribution to teaching the Holocaust helpful, although its recommendations for providing "new forms of witnessing" and "narrative strategies" to counter the mythology of victimization may leave them wondering about how best to introduce the *Holocaust* into the curriculum. The Research Support Tool, which sits aside Theresa Rogers' study, would enable them, for example, to explore the meaning of word Holocaust, leading them to see how the word has been variously defined in reference works, as both exclusively reserved for the extermination of the Jews during the World War II and as possessing a wider usage in the English language that includes, for example, John Milton's use of it in "Simon Agonistes." They could see how the word itself has taken on the historical significance of this horrific event, and they would learn from related studies that, in one case concerned with the teaching of German, the very issues of teaching the Holocaust were made part of the curriculum (Schulz, 1998).

In trying to evaluate how realistic it is to expect schools to include the Holocaust in the curriculum, the Research Support Tool would lead them to an editorial in *Reading Online* that points to how Anita Lobel's (1998) *No Pretty Pictures*, a Holocaust memoir, is listed by the California Department of Education as "recommended literature" for the teaching of history (Grisham, 2002). These readers might also discover, through the media links, that in seven states, laws have been passed that provide for Holocaust education in public schools, while ten states have developed Holocaust curriculum units (Brabham, 1997). As of this writing, a number of teaching units were to be found on the Open

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23 The explicit identification of an appropriate context for interpreting research provides support for what Murphy and Alexander (2002) identify as the reader's "strategic processing" knowledge in their Model for Domain Learning. This knowledge is "invoked to overcome perceived deficits in understanding or to circumvent potential barriers to learning" (p. 199) and might include, in this case, an ability to review the study's metadata, to tap into online critical discussions of the ideas, and to see if one can comment on the work from one's own perspective and experience.

Learning Agency site. Finally, they could come across an online discussion on H-Net (1997, September 10), in which David Klevan, from the United States Holocaust Memorial Museum, talks about why ~~objections~~ to the teaching of *The Diary of Anne Frank* (Frank, 1952) ~~as a way of moving~~ students away from the more common experience of Europe's Jews during the Holocaust.

After each hyper-linked excursion to resources outside the study, I imagine the readers returning to what Theresa Rogers has written, finding greater cogency to her arguments for providing a historical framework for the Holocaust. The Research Support Tool provides such a context for interpreting and evaluating Rogers' study. Readers would be able to select studies and documents that they otherwise would not have known about and find highly related materials because the Research Support Tool uses the author's own indexing terms to guide its search. The readers would have acquired a context around which to begin expanding the English curriculum's representation of difference that goes well beyond *The Merchant of Venice*. They would see a need to do more than portray the victimization of the other when teaching the young about prejudice and racism. They would feel prepared to sit down with other educators and community members to begin to discuss how literature's representation of difference, whether in Shakespeare's plays or Anne Frank's diary, can become a focal point of great educational value for English classes, as well as for their own reading. ~~so~~ I would like to imagine. We have now to test with parents, teachers, and others who might use the Research Support Tool, ~~now that we have a device that can~~ provide a far richer context for reading, interpreting, and utilizing scholarly literature.


### Conclusion

As this reading research community has always cared about the expansion of literacy in terms of personal and political rights, as this community has worked for a century or more on extending literate access to the word and the world to more people through our scholarly efforts, it now stands at a critical juncture. The technology has not brought us to this point, or at least it is not the technology alone. The machinery that we sit amid, that sustains the connections among us, needs to be redirected, as we are inspired by traditions of oral commentary, public libraries, or literary theory, to support new levels of engagement with the forms of knowledge in which we are already heavily invested.

Here is a chance, not only through our research efforts, but through our professional associations and university libraries, through the choices that we make in publishing our research, to alter the public situation of literacy and knowledge, to expand our readership and contribution, to test our work on a global platform, to open what we do to this greater global exchange. Here is a chance to direct what we know about reading toward improving both the scholarly quality and public accessibility of this body of knowledge. At the very least, the prospects of expanding the experience of reading in an Age of Information are worth inquiring after and assessing in the way that we do so well.

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