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**(In)formation literacy:
A positivist epistemology and a politics of (out)formation**

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There are no ultimate sources of knowledge.... Every source, every suggestion, is welcome and every source, every suggestion is open to criticism. The proper epistemological question is not one about sources.¹

Libraries as Contexts for Literacies

Since the advent of alphabetic writing and manuscript culture three thousand years ago, libraries have functioned as key repositories of the social and cultural memories preserved in print materials. As material spaces designed specifically for textual work, libraries constitute pivotal technologies for the institutions and ideologies of education. Educational theories and practices — and their concomitant literacies — converge symbolically and substantively in curricular and pedagogical activities undertaken with and around the information resources of school libraries. Indeed, within the context of school education addressed here, professionally trained media center specialists and teacher-librarians function as intermediaries between society and school, and between teacher and student, through their work of acquiring, managing, and distributing information resources and services.

From a poststructural theoretical perspective, school libraries constitute powerful technologies of disciplinary governance through a micropolitics specific to practices of reading, writing, viewing, and researching for learning.² Yet, taking their cue from the literatures of library and information “science,” discourses of school media centers and libraries typically assume and assert a neutral status for their procedures and practices. This self-proclaimed impartiality — albeit in the service of liberal education — has historically rendered the role of libraries invisible and exempt from critical inquiry. My aim here is to challenge this misconception by making the school library the object of critical analysis and investigation. In particular, my focus is on the trademark pedagogy of school library literacy, namely, information literacy.

As distinctive architectural forms and collections of cultural materials, public and educational libraries alike symbolize that which is timeless and worthy of preservation. The values of “Liberty, Truth, and Justice,” or the like, carved above imposing stone facades, signify the ideals of liberal enlightenment that reason and objective knowledge purportedly endow on those authorized to enter their silent sanctums of scholarship. Comprising physical places and discrete collections of static materials, conventional libraries seem as solid as ever, immovable in structure and immutable in policy, procedure, and practice. Whilst many libraries now serve as gateways and portals to a wide range of digital information and e-

books, their material stability and logics of preservation and permanence belie the cultural, financial, and ideological pressures many school libraries and media centers currently face.

The object of inquiry here is the signature discourse of school library instructional practice, that is, information literacy. My thesis is that, because of its positivist philosophical orientation, the information literacy framework is incompatible with emergent concepts of knowledge and epistemology for digital and online environments. I begin with a review of government policy documents and research reports that promote information literacy as an antidote to information overload and a panacea to the problem of lifelong learning within a context of fast capitalism and economic globalization. Following a review of information literacy definitions taken from American and Australian educational contexts, I show that the epistemological assumptions of the information literacy framework are at variance with recent theorizations of language, text, and knowledge. Far from contributing to equitable educational outcomes, this framework for school library research masks an exclusionary ideology. Furthermore, I argue that the potential to dismantle library logics and cultures as they are currently understood and enacted lies not with technology itself, but with the disjunctures and dissonances between traditional library values and practices and the new social conditions, textualities, and literacies emerging within contexts of economic and cultural globalization.

Information Literacy as Panacea

In late-capitalist nation-states such as the United States and Australia, resource-based learning and its corollary, information literacy, are viewed as requisites to lifelong learning and the multiple career trajectories of the shape-and-shift “portfolio” generation.³ Federal and state government reports, school policy documents, practitioner manuals, and publications for library professionals tout information literacy as a core skill for education and the workplace. The following provides a brief review of these claims from key U.S. and Australian documents.

It is noteworthy that the concept of being “literate” with and about information emerged not from an educational context but from the industrial sector. The phrase “information literacy” was first used in a 1974 government report compiled by Paul Zurkowski, the president of the Information Industries Association (IIA). The IIA — now the Software and Information Industry Association — was formed as an advocacy agency for private, for-profit organizations concerned with the production and sale of information. As part of the 1974 report for the National Commission on Libraries and Information Science, Zurkowski reviewed the kinds of skills needed by employees in the burgeoning information services sector. His description of the issue formed a conceptual template that was subsequently adopted by librarians and educators. He wrote

People trained in the application of information resources to their work can be called information literates. They have learned techniques and skills for utilizing a wide range of information tools...in molding information-solutions to their problems.⁴

Zurkowski’s conception of information work both enabled and constrained a particular model of information literacy that continues to be used in schools today. His concern was with instrumental “techniques and skills” that could be “applied” in finding “solutions” to “problems.” My aim here is to critique this universalist, cognitive characterization of information as a neutral resource for learning through problem solving.

In the United States today, information policy and school media center practice are guided by the meta-policy document, *America 2000: An Education Strategy*.⁵ This initiative of the first Bush administration outlined eight National Education Goals and four strategy

tracks. Many readers will be familiar with these goals and the debate generated by them. Two of the goals dealt directly with the nature and purpose of knowledge and learning and, thus, require mention. Goal III, for example, stated that every school will ensure that its students “learn to use their minds well, so they may be prepared for responsible citizenship, further learning, and productive employment.” Goal V similarly referred to the economic value and power of information derived from the “knowledge and skills development” necessary for the United States to “compete in a global economy.”⁶

A subsequent ERIC publication, *Libraries for the National Education Goals*, defined the role of school library media centers in achieving these goals.⁷ Following research conducted by the National Forum on Information Literacy — an umbrella group of sixty-five business, government, and educational organizations in the United States with an interest in promoting information literacy — specific outcome measures for curricular planning and teaching in and through libraries were established. These were described in the report *Outcome Measures for Information Literacy Within the National Education Goals of 1990*, which recommended specific policies to facilitate achievement of the outcomes for each goal at local, state, and national levels.⁸ Two of the fifteen measures are relevant to this discussion. They are:

- ◆ *Critical thinking/problem-solving* skills will be developed and honed through meaningful activities involving *finding* and *interpreting* information; and
- ◆ Ongoing demonstrations will be made of *how facts learned* in classes become woven together to *reveal* the interrelated *patterns* of the world.

As illustrated below, this report — and subsequent library policy documents at school and systems levels — construct information work in terms of the Critical Thinking paradigm.

The school library is viewed as a place where authoritative information is “found” and “interpreted.” Through fact-finding activities, students will purportedly develop an ability to “think critically” and to “solve problems.”⁹ They are required to “demonstrate” the learning outcomes of such work, which are “facts learned in class.” Propositional content can be “woven together” such that “the interrelated patterns of the world” are “revealed” to students. This view of knowledge and learning constitutes a positivist epistemology in which there are singular physical and social realities, or “worlds,” separate from the student and accessible through language. Recent constructivist, poststructuralist, and postpositivist theories contest these assumptions, as shown in the critique of information literacy that follows.

Throughout the 1990s, an active constituency of information literacy advocates successfully promoted its integration into core school curricula.¹⁰ Two key documents, which were joint publications of the American Association of School Librarians (AASL) and the Association for Educational Communications and Technology (AECT), are worthy of mention here: *Information Power: Guidelines for School Library Media Programs* and a second edition, *Information Power: Building Partnerships for Learning*, published ten years later.¹¹ The first edition of *Information Power* established the centrality of libraries and librarians to education and provided library media specialists with a professional vision for what were becoming increasingly technologized work environments. The second edition set guidelines for school library media programs and information literacy standards for student learning. Both of these documents presuppose that information literacy bestows power on those who understand and apply its precepts and standards. They assert that information literacy in and of itself is a key to prosperity for both the individual and the nation in the new knowledge economy. I believe that this constitutes an impoverished perception of the political economy of information access and use for many students today.

These policy initiatives in the United States have parallel developments in Australia. For example, the Australian *National Goals for Schooling in the Twenty-First Century* similarly states that students should “have the capacity for, and skills in, analysis and problem solving and the ability to communicate ideas and information.” Subsequent federal government reports reinforced the need for lifelong learning and equitable access to information in the realization of the national goals.¹² As in the United States, these documents rely on a swathe of research reports to provide both descriptive and prescriptive accounts of Australia’s entry into the global information economy through the provision of education.¹³ Many also note the role that school libraries should play in developing the information literacy skills needed to function in workplace environments that are increasingly mediated by digital and online technologies.¹⁴

Like most postindustrial nation states, educational reform in Australia today is driven by the imperatives of the global economy. Indeed, the Australian federal government recently prepared an education action plan, which is the education and training industry’s response to the government’s *Strategic Framework for the Information Economy*.¹⁵ The plan’s title, *Learning in an Online World: School Education Action Plan for the Information Economy*, shows the extent to which the rationale for schooling is driven by discourses of technology and the global market economy.¹⁶ This is apparent in the following quotation:

Schools must prepare young people for new forms of work and work organisation. *Information and technological literacy* are now essential pre-requisites to work.... School-to-work pathways must be strengthened to support the requirements of Australian industry, including the ICT [information and communication technology] industries.¹⁷

The overarching vision for this particular recommendation consists of five goals, four of which focus on technology and the economy, while the social responsibilities and cultural dimensions of schooling and education are, in large part, overlooked. In light of events of and since September 11, 2001, in New York, this focus is inadequate at best, and misconceived at worst.¹⁸

In sum, the notion of being “information literate” was the library profession’s response to technological change and to the proliferation of information.¹⁹ Perhaps it is timely for the profession to consider whether a preoccupation with technologization has caused them to overlook less tangible but more profound developments around issues of knowledge and epistemology. An analysis of that oversight requires a definition of the term information literacy, to which I now turn.

Information Literacy: Defining the Indefinable

The idea of fixed meanings and determinate definitions is alien to the poststructuralist theoretical perspective underpinning this paper. Yet, critique presumes a shared conceptual language and practice that is subjected to discursive analysis. The critical analysis of information literacy undertaken here requires (1) consideration of the social and economic conditions enabling its emergence and (2) examination of the meaning attributed to it by those who use it.

The literature shows that the meaning of “information literacy,” since 1974, has never been monolithic or fixed.²⁰ Despite its being the topic of numerous conferences and a considerable body of scholarly work, no consensus on its theoretical or practical dimensions has emerged.²¹ While the literature has a sense of urgency about ensuring that learners are “information literate,” neither the products (that is, learning outcomes) nor the processes of information literacy are universally understood or accepted. Kathleen Tyner notes, for

example, that the term “information literacy” was used interchangeably with “library-based research” until publication of the report *A Nation at Risk* in 1983, at which time its meaning changed.²²

Prior to this, library instruction had focused on the use of the card catalogue, knowledge of the Dewey Decimal classification system, proper care of library materials, and knowledge of literary authors and illustrators. *A Nation at Risk* constituted a significant turning point with its condemnation of American education and the subsequent outrage it drew from the library profession, which thought that the report’s recommendations for reform neglected its own significance. Tyner claims that, following their “exclusion” and the “need to market their role to the educational community,” the library profession adopted the information literacy strategy to enhance their relevance to the information society.²³ The alleged threat from technology and the imperative to improve libraries’ public image provided, in Michel Foucault’s terms, the “enunciative space” for information literacy to emerge as a mainstream discursive formation.²⁴

Information literacy is variously viewed as “using information technology; as a combination of information and technology skills; as acquiring mental modes of information systems; as a process; as an amalgam of skills, attitudes, knowledge; as the ability to learn; or as a complex of ways of experiencing information use.”²⁵ The American Library Association Presidential Committee on Information Literacy states that information literacy is a “means of personal empowerment” because it allows people to become “*seekers of truth.*” Information literacy is deemed important because it allows learners to “experience” the “excitement of the *search* for knowledge” and “their own successful quests for knowledge.”²⁶ In this text the representation of learning is strongly biased toward processes of information retrieval and reception.

Librarians generally understand information literacy as the ability to locate, evaluate, and use information to become independent lifelong learners. Michael Eisenberg and Robert Berkowitz’s Big Six Skills approach is one of the more common models of library information education. This approach dominates the ERIC Clearinghouse on Information and Technology Web site for Information Literacy, as various instantiations of the model comprise seven of the twenty-three available hyperlinks to other resources.²⁸ Patricia Senn Breivik and J.A. Senn’s, *Information Literacy: Educating Children for the Twenty-First Century*, a written for teachers, school media specialists, and teacher educators, illustrates this conception of information analysis. In the introductory chapter, “Surviving in an Information Age,” the authors contend that “education cannot go back to the basics,” and that “resource-based learning” and its corollary, information literacy, are antidotes to that too-prevalent contemporary dis/ease, “information anxiety.”²⁹ Breivik and Senn assert that, because of the proliferation of information, students must become “information detectives,” who can “readily find the information they need in any situation” and then “weigh the truthfulness of the evidence they find.”³⁰ Truth in this context is constructed as certain, objective, and good. Furthermore, it is accessible to learners who “detect” or discover it through dispassionate and rational problem-solving techniques.

Much of the literature constructs information literacy as a programmatic approach. A large corpus of articles written by teachers provides anecdotes of cooperative curricular planning and teaching and furnishes lesson plans integrating information literacy into library research activities. The American Association of School Librarians and the Association for Educational Communications Technology define three categories of standards for “best practice” in information literacy: information literacy, independent learning, and social responsibility.³¹ Furthermore, for each of these categories, there are three standards informing the reader that the student who is information literate “accesses,” “evaluates,” and “uses” information “efficiently,” “accurately,” “competently,” and “creatively.” These statements

are tautological and, hence, unhelpful as guidelines for establishing teaching or learning outcomes. On the one hand, reference is made to the issue of critique, “ethics,” and “social responsibility”; on the other hand, the learner is represented as an uncritical recipient of information. The supposition that a student who “contributes positively to the learning community and to society is information literate and recognizes the importance of information to a democratic society” is educationally empty.³² Worse, without explicit recognition of the sociopolitical and ideological dimensions of information and knowledge consumption and production, such statements are not only unhelpful; they are potentially insidious.

While information literacy is understood variously as a process, a concept, a behavior, or a framework, one thing is certain: it emerged from the disciplinary knowledges of cognitive and psychological science. Irrespective of the geographic context,³³ or the library program’s emphasis — whether library skills, study skills, or bibliographic skills — the presupposition underlying all of this semantic variation is that information literacy comprises attitudes and skills inside an individual student’s head. Yet, new capitalism and its logic of distributed systems is redefining intelligence and knowledge and establishing new forms of learning and working that are different from the rugged individualism of liberal and neoliberal approaches. Furthermore, resource and information use in schools is framed within the discourse of positivism and based on three misconceptions: (1) the school library provides a neutral service, (2) the library user is an autonomous individual, and (3) language is a transparent conduit for the transmission of meaning in information.

Information Literacy: A Poststructuralist Critique

Library practice and the discipline of information science are deeply rooted in Enlightenment notions of Western science. Library science literature shows how the spatial organization of knowledge in libraries contributed to the institutionalization of scientific knowledge through the classification and physical arrangement of collections into orders of hierarchical materials.³⁴ These materials — with the apogee of “factual” knowledge being the encyclopedia — served historically to construct and privilege disciplinary and curricular boundaries. Librarian and library user alike viewed print collections as reifications of natural and social realities and of the research practices for defining and objectifying those realities. In turn, taxonomies of social scientism infiltrated and constituted library and information “science.”³⁵

The logic of school libraries and their approach to meaning and knowledge are informed by positivist epistemologies, which emerged following the rejection of metaphysics and religion during the Enlightenment. A core assumption of the Enlightenment legacy for science was the insistence on epistemological neutrality and objectivity. Following this approach, library theorists and practitioners established their legitimacy as an independent service and an objective science by combining “information science and communication theory with the neutrality of scientific investigation.”³⁶ Based on the empirical method, their literatures and pedagogies asserted that observation and measurement of social and natural phenomena were prerequisites to the production of legitimate knowledge.

Libraries are one of the “most visible and important temples” erected by society to the positivist belief in an ordered world that can be described and classified according to a set of universal principles.³⁷ The space of school libraries is different from other social spaces because it is organized by the logic of textual exchange and literate work. Two prominent metaphors for understanding the discursive space of libraries are “the search,” and the tension between “order” and “disorder.”³⁸ Searching catalogues, data bases, print materials, and indexes embodies the seeking out of underlying structures, meanings, or truths proposed by a positivist worldview. The notion of library users as “information detectives,” mentioned

previously, exemplifies this ideology. Tensions between the impulses of order and disorder occur because libraries are domains of regularity and certainty, whereas users introduce forces of disarray and ambiguity. Because the structures of library organization and the procedures of library practice express a will toward permanence and canonicity, librarians have been trained primarily as custodians, archivists, and curators of educational materials. In their daily activities of cataloguing and shelving, and in librarian/user interactions, librarians dispense order through providing texts to help the user solve an information need or “problem.” Classical and popular literature alike, as diverse as the works of Umberto Eco, Isaac Asimov, and Stephen King, provide memorable cameos of stereotyped, repressed librarians, victims of their own fetish for organization and order.³⁹

As noted previously, discourses on and about information literacy are associated strongly with the critical thinking paradigm. Most librarians and media specialists in schools use “critical” in the sense of detecting flaws in logic, factuality, or argumentation. Analytic techniques include the ability to set goals, to establish the authority of sources, to assess the accuracy and relevance of information, to detect bias, and to identify assumptions.⁴⁰ The key feature of this paradigm is foundationalism, where “facts” are sought and used to make a case or argument. Following Colin Lankshear, Ilana Snyder, and Bill Green’s approach to technology, I call this an instrumental, or “operational,” approach to information, in which students learn information, learn *with* and *through* information, but fall short of learning *about* information and *about* knowledge.⁴¹ An operational approach emphasizes the consumption of information but lacks metaknowledge because it neglects the sociocultural, historical, and ideological processes of knowledge construction and justification. Like the representation of libraries as neutral institutions and services, information and information literacy are similarly represented as unproblematic, atheoretical, and apolitical.

Yet poststructuralist theories of language, culture, media, and technology have generated alternative epistemologies that challenge positivist conceptions of knowledge.⁴² They provide theories, concepts, and tools for analyzing language, knowledge, and power as historically and culturally located practices. French theorists Michel Foucault, Jacques Derrida, and Jean-François Lyotard first unmasked the discursive principles and pretensions of the modernist project through narratives of science and technology. Following their work, those who were once marginalized from the canon of legitimate knowledge (for example, women, lesbians and gays, postcolonial peoples) devised alternative epistemologies to that of positivism’s single, exclusionary Truth. Feminist, standpoint, social, and digital epistemologies entail different knowledge/power relations and new ways of approaching and using text; these different conceptions contest the credibility of library theories and practices that are based on materialist textualities and literacies, such as information literacy.

A high proportion of activities undertaken in school libraries are based on the assumption that students lack something (that is, information), which only the teacher or librarian can provide. Yet the role of the librarian as “fact provider” is becoming obsolete. The reason for this is that information work in digital environments is not so much about locating discrete facts or specific texts. Online library searches do not

lead from point A (the catalog, the reference desk) to point B (the book, the answer, the truth), but instead invite their computer-literate users to explore on their own the many recesses of a multicursal maze, placing them again and again in decision situations, at forks or nodes where multiple paths lead down through the hierarchies of subject headings, on their way to what may or may not be a useful or even existing document.⁴³

Linear and hierarchical approaches to thinking and learning are inadequate for the webbed cyberspace of information. The plasticity, instability, and intertextuality of hyperlinked documents have eroded the sacrosanct orthodoxy of authorship and authorial authority. Hence, the traditional questions of school library research — “Have you used your own words?” and “Is this your own work?” — are less valid and useful.

Within the present context of an information glut, librarians and users spend their time not so much searching but interpreting, filtering, and value-adding by creating relationships among ideas across a range of media. Librarian and cyber-searcher cooperate not to locate a particular text to meet a specific need, but to associate or relate texts that become meaningful through specific, task-dependent criteria. Locating discrete bits of information contained in a particular text is no longer the aim of the exercise. Rather, the purpose of their textually mediated contact is to add epistemological value through connecting and cohering seemingly unrelated texts and ideas. The proliferation of chaotic digital information, and the increasing disparity of end-point textual products and knowledges, have created a situation where knowledge is located not so much in text as such, but in the co-construction of situated meanings among learner, teacher, and media center specialist.

A similar shift from defined specifics (that is, facts) located in set texts to just-in-time relationships and connections for making meaning has also occurred in beliefs about the locus of knowledge. Traditionally, schools and libraries have concerned themselves with improving the minds of students and producing clever people. As explained previously, conventional information literacy approaches view knowledge as facts, propositions, or skills that are located in the heads of individual learners. Yet the application of sociocultural and sociological theory in educational settings and also in the management-based research of new capitalism shows that knowledge and learning are not located in minds and “owned” by individuals. Studies on the networking practices of advanced capitalist workplaces show that it is more appropriate and useful to consider knowledge and learning as socially distributed across people and technology, far beyond individual minds and bodies.⁴⁴

Industry today focuses on speed, flexibility, and innovation; expertise is viewed not as a product but as a fluid process. Knowledge is developed within globally spread communities of practice that are embodied in organizational, intellectual, social, cultural, and material interactions among members with a range of tools and technologies. New workplaces have a greater need for people who are good at collaborating and sharing knowledge than for smart individuals who, when they leave the enterprise, take their skills and expertise with them. Given the high level of workforce mobility in a world increasingly characterized by human movement, knowledge developed within learning communities needs to be transferable to other work teams and transformable into other project or portfolio contexts. This is not to say that library literacies in schools should be framed around the imperatives of global capitalism — far from it. Rather, it is to highlight the vulnerability of youth who leave school without having had an opportunity to interrogate and contest texts as socially constructed artifacts that have material effects on them and the world around them.

Then there is the issue of criticality, or rather its dearth. For three decades now, literacies have been conceptualized as variable social and cultural practices that emerge with and around technologies of inscription.⁴⁵ Whereas most disciplines have engaged the implications of social and critical theory, many working in the school library sector have not.⁴⁶ A sociologically critical dimension — in contrast to a psychologically critical one — would acknowledge that authors and graphical designers make semantic, lexical, and grammatical choices with particular goals, interests, and agendas in mind. It would concede that knowledge is imbricated with power and that information work — be it in the school library or the workplace — is economic and political action.

This approach would focus not on logic but on ideology, which here refers to the use of meaning in the service of power. Recognition of the ideological force of language and image in oral, print, and multimedia texts behooves the school library profession to renounce the status of their libraries as neutral conduits for the transmission of information. The profession needs to acknowledge that, irrespective of whether they view their libraries and cybraries as physical places or electronic spaces, there is no space outside of language, politics, and ideology — not even within the seeming sterility of bits, bytes, and bandwidth.

School media center specialists and cybrarians would do well to concede that information and its outcome, knowledge, are not static, unquestionable, and authoritative entities; rather, they are products of culturally specific spaces and relations of power that directly or indirectly include and exclude those without access to their discursive forms and practices. The effect of this is what I call an *outformation*, in contrast to the *information*, or inclusion and empowerment, of those who understand how these forms work. Whereas information “problem solving” emphasizes processes inside individual’s heads, a critical information literacy would analyze the social and political ideologies embedded within the economies of ideas and information. Information literacy, as a method of approaching textual work, is not autonomous and neutral; it intersects with variables of gender, socioeconomic status, age, ethnicity, religion, and geographic location to generate different learning outcomes in different classrooms and educational contexts.

The issue of new media also looms large for school libraries. Allan Luke and Carmen Luke, for example, argue that the current focus on early intervention literacy programs masks an inability on the part of educational systems to cope with new forms of adolescent identity framed by multi-mediated texts, cultures, and practices.⁴⁷ Not to account for digital media and technological convergence in teaching and learning, and not to provide students with an understanding of the multiple literacies required to use these multimodal texts, is exclusionary — particularly in contexts such as libraries, which are agents and gateways for information access. While children and youth will continue to read and enjoy classical and popular fiction, and to borrow nonfiction materials for assignments and research, many are turning to alternative media for recreational reading and research information.

Print materials have long been superseded as the primary form of information and entertainment. Less than thirty-five percent of publishing today involves books.⁴⁸ A focus on written language alone, as opposed to combinations of other sensory ways of knowing such as sound (music, sound effects, silence), visuals (color, perspective, vectors), and kinesics (body movement, gesture, sensuality), provides a one-dimensional and impoverished perspective on what is a fabulously rich world of semiotic resources and communications potential for youth today.⁴⁹ Like the computers they learn from and through, many youth excel at multitasking.⁵⁰ Their cyborgian capacity to “study” while simultaneously attached to a mini-disk playing MP3s, watching television, and talking to a friend on a mobile phone confounds adults. Engagement with the pedagogies of digital cultures in school settings would go a long way toward alleviating the alienation many youth feel toward “bookspace” and school libraries. What, then, can libraries do to account better for the shift from print to electronic media and hypermediated textualities that captivate students? One possibility is to think about what I call a “hyperliteracy.”

Toward a Hyperliteracy

The concept of “information literacy” privileges the role of information in learning and teaching. Yet, the recent critique of information as the *zeitgeist* of the age,⁵¹ and the shift from a focus on “facts” as such to their contexts of sociocultural production and consumption, indicate that the term is now pedagogically unviable. I therefore propose an alternative for school libraries: a hyperliteracy, which better defines and encapsulates the

kinds of epistemological presuppositions and literacies required in the distributed, networked nodes of today's workplaces, homes, communities, classrooms, and cybraries. What then does hyperliteracy mean, and what are its implications for school library practice?

A hyperliteracy approach draws from and extends two theories of literacy pedagogy: multiliteracies and intermediality.⁵² Hyperliteracy represents approaches to text, authorship, and knowledge that are located within a postpositivist paradigm. They seek to problematize their own assumptions and practices. Critical thinking, critical literacy, and information literacy approaches have focused on only one mode of representation and communication, namely, language. A multiliteracies framework, on the other hand, recognizes that meaning-making has always been multimodal and is increasingly multimediated. The concept of a multiplicity of literacies extends the locus of textual semiosis beyond language and print to sound, visuals, gesture, and space, thereby giving legitimacy to what were hitherto marginalized communications media and textualities in school curricula. A multiliteracies approach around information materials provides a metalanguage for talking about the design elements of textual analysis, production, and reproduction across the five modes of communication. In doing so, it validates the many genres and media formats (such as magazines, mobile phone text messaging, music, graphical novels, television commercials, Web sites, and video games) through which youth in consumer societies negotiate and construct their interests and identities.

Like the multiliteracies approach, Ladislaus Semali and Ann Pailliotet's theory and praxis of *intermediality* argue for a literacy pedagogy around texts that are meaningful to students. "Intermedial" concepts and practices draw from a range of media theories to develop critical awareness of the construction of representation as an integral part of learning literacy and learning through literacy. Intermedial pedagogies affirm the following principles:

- critical engagement with the contemporary social world and a proactive politics of social justice;
- critical accounting of the sociohistorical contexts and discursive conditions of the learner's personal and professional experience;
- ongoing critical interrogation of the constitutive assumptions, categories, and concepts of the theoretical and material practices at hand; and
- continuous critical confrontation with alternative theories of social and epistemological explanation through examination of their strengths and weaknesses and through transformation of the object of their application.

Within a school context, an intermedial pedagogical approach would entail rethinking and overtly theorizing cultural and material practices of school libraries that are already in a state of tremendous flux.

The notion of hyperliteracy would acknowledge these social, technological, and epistemological developments by moving beyond the exclusionary approaches of modernist frameworks (as in traditional information literacy). For example, the "information process" as it is currently understood — define a problem; locate appropriate information; select, organize, and synthesize resources; create and present a solution; evaluate the effectiveness of the task completion — is devoid of any opportunity for students to examine the social context and construction of either the information "problem" or its "solution." Neither the constituent assumptions of the problem, its process of formulation, the subsequent solution, nor the information used in solving the problem is contextualized or problematized. This, in turn, precludes the availability of multiple and alternative solutions and naturalizes the information process, making it immune to discursive interrogation and transformation.

A hyperliteracy, on the other hand, would encourage students to reflect critically on the process. The modifier “hyper” denotes a condition of being “over,” “above,” or “more than normal.” I use it here to refer to the multidimensional, blended literacies that occur when the practices of critical literacy, media literacy, visual literacy, and multiliteracies fuse in hypermediated textual environments. Because it comprises being literate about literacy, hyperliteracy is a *metaliteracy*. A hyperliteracy would strip away the neutrality attributed to information literacy and render visible its role in establishing epistemic authorities that embody and perpetuate particular relationships among students, the curriculum, library texts, and the world outside school.

In collaboration with teachers, school media specialists need to add “critique” to their information literacy pedagogical practice. This phase would help students pose questions such as, “Who posed this information problem? Why was it adopted and others precluded? How was the resultant information solution arrived at? What role did the limited resources of the school library play in the investigation and construction of the solution? What alternative explanations or expositions might have eventuated if resources from a more eclectic knowledge space were accessed? Were unofficial materials and resources, such as oral histories, Internet chat sites, Web sites, indigenous knowledges, personal testimonies, family documents, community museum artifacts, sought and used? If so, how were they juxtaposed with curricular resources? Was there concurrence or contradiction in their juxtaposition?”

Conclusion

Such questions have tremendous implications for the provision of school library collections generally and for specific library techniques such as materials referencing. Jack Kessler rightly notes, for example, that a “book classification system subdivided endlessly for the convenience of the Protestant Christian falls short in an Asian Buddhist country.”⁵³ From this standpoint, school resource centers are far more than places for storing selected information resources and for providing information “(dis)services.” They are real and virtual social and discursive “species of spaces” for clashing languages, cultures, and ideologies through literacies.⁵⁴ The notion of a canon in the online environments of cybraries is unviable because the value of textual information is contingent upon its use in the transitory process of a specific search. This means that classical dichotomies of true/false, important/trivial, and enduring/ephemeral are no longer as important as they were with print technologies. The permanent collections of print cultures and libraries embodied objective, positivist orientations. The impossibility of a “collection” in the superfluity of cyberspace promotes impermanence and heightened subjectivity.⁵⁵ Disciplinary logics and rationalities different from those imposed by Aristotle, Dewey Melvil, John Dewey, or the Library of Congress are now possible. Therefore, librarians need to acknowledge that literacies — including information literacy and hyperliteracy — are social practices that are contingent upon the contexts of their location, construction, distribution, and consumption.

Connections rather than *collections* constitute the material and social bases of information work in schools today. As a result, media center specialists and teacher-librarians need to rethink the literacies and epistemologies of their changing libraries.⁵⁶ Approaches that are based on print models of knowledge, communication, and meaning are limiting for mainstream students. Furthermore, they are positively detrimental to minority students who suffer the discursive and cultural dissonance that arises from the application of alien and outmoded educational practices. It is timely therefore for teachers and school media specialists to recollect how rote learning, memorization, and functional literacy were used to produce a passive, noncritical labor force for the industrial economy. Information literacy, as an inadequate and exclusionary approach to learning through research, could well be repeating that injustice.

I have argued here that hyperliteracy is more useful for texts of digital resources and more compatible with the interests and expertise of youth today. This approach would ensure that students are truly discursively *informed* —that is, part of and creatively resistant to new communications cultures and textualities. It would also alleviate the pessimism some school media specialists and librarians experience as they strive to cope with the “inverted priorities and misguided sophistries” of the increasingly commercialized McLibrary.⁵⁷ Following calls for “librarians to rule the Web,”⁵⁸ the moment is full of possibilities for those willing to engage with the productive pedagogies of literacy *information*.

1. Karl Raimund Popper, and David Miller, (Ed.) *Popper selections* (Princeton, N.J.: Princeton University Press, 1984), 54.
2. Michel Foucault, *The Archaeology of Knowledge* (London: Tavistock, 1972).
3. James Paul Gee, Glynda Hull, and Colin Lankshear, *The New Work Order: Behind the Language of the New Capitalism* (St Leonards, NSW: Allen and Unwin, 1996), 167.
4. Cited in Kathleen Tyner, *Literacy in a Digital World: Teaching and Learning in the Age of Information* (Mahwah, N.J.: Erlbaum, 1998), 98.
5. *AMERICA 2000: An Education Strategy* (Washington, DC: U.S. Department of Education, 1990).
6. See *Archived Information: National Education Goals*, SEC. 102. <http://www.ed.gov/legislation/GOALS2000/TheAct/sec102.html>. Last accessed 8/19/01.
7. Barbara.K. Stripling, *Libraries for the National Education Goals* (Syracuse, N.Y.: ERIC Clearinghouse on Information Resources, 1992).
8. Christina S. Doyle, *Outcome Measures for Information Literacy Within the National Education Goals of 1990*. Final Report to National Forum on Information Literacy: Summary of Findings, 1992; and Helen M. Thompson and Susan A. Henley, *Fostering Information Literacy: Connecting National Standards* (Goals 2000, and the SCANS report, 1999).
9. This formulation raises a number of questions: Whose problems are formulated, articulated, and subsequently “solved?” In what way are they solved? Which solutions are deemed (il)legitimate and (il)logical in school contexts, with their emphasis on learning for assessment and certification?
10. See Patricia Senn Breivik and James A. Senn, *Information Literacy: Educating Children for the Twenty-First Century*, 2nd ed. (Washington, DC: National Education Association, 1998); California Media and Library Educators Association, *From Library Skills to Information Literacy: A Handbook for the Twenty-First Century*, 2nd ed. (California School Library Association: LMC Source, 1997); and Kathleen L. Spitzer, Michael B. Eisenberg, and Carrie A. Lowe, *Information Literacy: Essential Skills for the Information Age* (Syracuse, N.Y.: Syracuse University Press, 1999).
11. American Library Association, *Information Power: Guidelines for School Library Media Programs* (Chicago: American Library Association and Association for Educational Communications and Technology, 1988); and American Library Association, *Information Power: Building Partnerships for Learning* (Chicago: American Library Association and Association for Educational Communications and Technology, 1998).
12. Laurie Carmichael, *Workplace Imperatives for Education and Competence* (Deakin, ACT: The Australian College of Education, 1993); and Eric Mayer (Chair), *Key Competencies: Report of the Committee to Advise the ACE and MOVET on Employment Related Key Competencies for Post-Compulsory Education and Training* (Canberra: Australian Government Publishing Service, 1992).
13. Information Industries Taskforce, *The Global Information Economy: The Way Ahead Canberra* (Canberra: Australian Government Publishing Service, 1997); and Don Tinkler,

Barbara Lepani, and John Mitchell, *Education and Technology Convergence: A Survey of Technological Infrastructure in Education and the Professional Development and Support of Educators and Trainers in Information and Communication Technologies* (Canberra: Australian Government Publishing Service, 1996).

14. Commonwealth of Australia, *Australia as an Information Society: The Role of Land Information Networks* (Canberra: Australian Government Publishing Service, 1991); Commonwealth of Australia, *Australia's Information Future: Innovation and Knowledge Management for the Twenty-First Century* (Canberra: Department of Education, Training and Youth Affairs, 1999); Dianne Northfield, *The Information Policy Maze: Global Challenges, National Responses* (Melbourne: RMIT University Press, 1999); and N. Ward, R. Fankhauser, and M. Turner, *Integration of Networked Learning Resources in Schools* (Canberra: EdNA/CESCEO Schools Advisory Group and Department of Education, Training and Youth Affairs, 1999).

15. Department of Communications, Information Technology and the Arts, *A Strategic Framework for the Information Economy: Identifying Priorities for Action* (Canberra: Commonwealth of Australia, 1998).

16. Commonwealth of Australia, *Learning in an Online World: School Education Action Plan for the Information Economy* (Canberra: Department of Education, Training and Youth Affairs, 2000).

17. Department of Communications, Information Technology and the Arts, *A Strategic Framework for the Information Economy: Identifying Priorities for Action*, 51 (emphasis added).

18. In the past twelve months, the Australian government has earned international notoriety for its policies on and poor treatment of refugees and asylum seekers in detention camps. The Government's mishandling of the issue has caused considerable tension within and between Australia's ethnically and culturally diverse communities.

19. For analyses of the impact of technology on information and library management, see Lawrence Dowler, ed., *Gateways to Knowledge: The Role of Academic Libraries in Teaching, Learning and Research* (Cambridge: Massachusetts Institute of Technology Press, 1998); Patricia Diamond Fletcher and John Carlo Bertot, eds., *World Libraries on the Information Superhighway: Preparing for the Challenges of the New Millennium* (Hershey, Penn.: Idea Group, 2000); David Raitt, ed., *Libraries for the New Millennium: Implications for Managers* (London: Library Association Publishing, 1997); and Jack Kessler, *Internet Digital Libraries: The International Dimension* (Boston: Artech House, 1996).

20. Lori Arp, "An Analytic History of 'Library Literacy'" *RQ* 34 (1994): 158–163; and Linda Langford, "Information Literacy? Seeking Clarification," in *Information Literate School Community: Best Practice*, eds. James Henri and Karen Bonanno (Wagga Wagga, NSW: Charles Sturt University, 1999).

21. See Di Booker, ed., *Information Literacy: The Australian Agenda, Proceedings of the First National Information Literacy Conference* (Adelaide, Australia, 1995); and Di Booker, ed., *Information Literacy: The Australian Agenda, Proceedings of the Third National Information Literacy Conference* (Adelaide, Australia, 1998); and Di Booker, *Concept, Challenge, Conundrum: From Library Skills to Information Literacy* (Adelaide: University of South Australia, 1999). For a review of research to date, see Christine Bruce, "Information Literacy Research: Dimensions of the Emerging Collective Consciousness," *Australian Academic & Research Libraries* 31, no. 2 (2000): 90–109.

22. Tyner, *Literacy in a Digital World: Teaching and Learning in the Age of Information*; and National Commission on Excellence in Education (U.S.), *A Nation at Risk: The Imperative for Educational Reform: An Open Letter to the American people: A Report to the*

- Nation and the Secretary of Education United States Department of Education (Washington, D.C.: Government Printing Office, 1983).
23. Ibid., 100.
24. Foucault, *The Archaeology of Knowledge*, 100.
25. Bruce, "Information Literacy Research: Dimensions of the Emerging Collective Consciousness," 97.
26. American Library Association, *American Library Association Presidential Committee on Information Literacy* (1989), <<http://www.infolit.org/documents/89Report.htm>>. Last accessed 1/10/01.
27. Michael B. Eisenberg and Robert E. Berkowitz, *Information Problem-Solving: The Big Six Skills Approach to Library and Information Skills Instruction* (Norwood, N.J.: Ablex, 1996).
28. Ask ERIC, *Information Literacy* (Syracuse: ERIC Clearinghouse on Information and Technology, nd.). <http://askeric.org/cgi-bin/print.cgi/Resources/Subjects/Information_Literacy/Information_Literacy.html>. Last accessed 10/15/01.
29. Note that the distinctive feature of the "information revolution" was not that information had suddenly become abundant or more important. As first proposed by Daniel Bell, the real revolution lay in the commodification of information through digital and communications technologies. Because information had acquired market value and henceforth could be sold, given away, stolen, misinterpreted, and distorted, its use and misuse held financial, economic, and political consequences.
30. Ibid., 20.
31. American Library Association, *Information Power*.
32. Ibid.
33. For work from New Zealand, see Penny Moore, *Towards Information Literacy: One School's Journey* (Wellington: New Zealand Council for Educational Research, 2000); for an international overview, see Christine Bruce and Philip Candy, eds., *Information Literacy Around the World: Advances in Programs and Research* (Wagga Wagga, NSW: Charles Sturt University, 2000).
34. John M. Budd, "An Epistemological Foundation for Library and Information Science," *Library Quarterly* 65, no. 3 (1995): 295–319.
35. Terrence A. Brooks, "The Model of Science and Scientific Models in Librarianship," *Library Trends* 38 (1989): 237–249; and S.E. Trosow, "Standpoint Epistemology as an Alternative Methodology for Library and Information Science," *Library Quarterly* 71, no. 3 (2001): 360.
36. William F. Birdsall, *The Myth of the Electronic Library: Librarianship and Social Change in America* (Westport, Conn.: Greenwood Press, 1994), 110.
37. Jeffrey Garrett, "Missing Eco: On Reading *The Name of the Rose* as Library Criticism," *Library Quarterly* 61 (1991): 373–388.
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43. Garrett, "Missing Eco: On Reading *The Name of the Rose* as Library Criticism," 381.
44. Jessica Lipnack and Jeffrey Stamps, *Virtual Teams: People Working Across Boundaries with Technology* (New York: Wiley, 2000).
45. Cushla Kapitzke, *Literacy and Religion* (Amsterdam: John Benjamins, 1995); and Brian V. Street, *Social Literacies* (London: Longman, 1995).
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