

Workplace Information Literacy: Cultivation Strategies for “Working Smarter” in 21st Century Libraries

Mary M. Somerville, Zaana Howard, and Anita Mirijamdotter

Abstract

This paper presents a hybrid framework of Swedish cultural practices and Australian grounded theory for organizational development and suggests practical strategies for “working smarter” in 21st Century libraries. Toward that end, reflective evidence-based practices are offered to incrementally build organizational capacity for asking good questions, selecting authoritative sources, evaluating multiple perspectives, organizing emerging insights, and communicating them to inform, educate, and influence. In addition, to ensure the robust information exchange necessary to collective workplace learning, leadership traits are proposed for ensuring inclusive communication, decision making, and planning processes. These findings emerge from action research projects conducted from 2003 to 2008 in two North American libraries.

Introduction

On an individual basis we experience some form of information overload, infostress, data smog or info-

fatigue daily.¹ In the workplace, the effect of this relentless wave of data can be paralyzing. Establishing data relevancy, resolving information priority levels, and determining source reliability often proves time consuming and overwhelming. Sense making in terms that inform problem solving and decision making in a timely fashion is increasingly difficult for the individual. Finding guidance amidst increasing uncertainty and continuous change requires scrupulous discernment while also remaining open-minded and flexible.

In response to this 21st Century dilemma, an applied framework for “better thinking”² has been developed and tested since 2003. Building on cultural practices and grounded theory from Scandinavia and Australia respectively, this workplace learning model has been developed over a five-year period through applied research projects in two California library organizations. A transferable approach, emerging from project outcomes, currently guides a comprehensive initiative to repurpose, redesign, and retool a Color-

Mary M. Somerville is University Librarian and Director at Auraria Library, University of Colorado Denver, e-mail: mary.somerville@ucdenver.edu; Zaana Howard is Information and Knowledge Manager for Lovell Chen Architects and Heritage Consultants, Melbourne, Australia, e-mail: zhoward@lovellchen.com.au; Anita Mirijamdotter is Professor of Informatics at the School of Mathematics and Systems Engineering, Växjö University, Sweden, e-mail: anita.mirijamdotter@vxu.se.

do academic library organization. This paper presents the philosophical context and theoretical framework for advancing workplace information practices in 21st Century information and knowledge organizations, based on “lessons learned” from this five-year research study.

Philosophical Orientation: Participatory Design

The founding Scandinavian participatory design philosophy encourages inclusive inquiry to explore, engage, and extend relationships among people and ideas. This approach emerges from the Scandinavian “socialist democratic” research tradition which acknowledges that neither technology nor information is neutral; rather, it is used for many purposes and serves different requirements.³ Therefore, varying agendas must be successfully negotiated, prompting participatory design practitioners to ask: how might different understandings be incorporated into organizational structures or technology product (re)design and how can the resulting outcome be integrated into different understandings?⁴ Addressing this paradoxical “mystery” requires embracing interconnectivity, diversity and development within the framework of a deep and abiding Scandinavian commitment to social betterment. It also requires acknowledging that inclusive participatory design processes deliberately change workplace assumptions, even as these activities further individual learning and growth within a larger context of social change.

Participatory design is, therefore, a transformative socio-political process in which power is negotiated through a complex process that requires multi-perspectival reflection and action. Authentic implementation ensures a strong emphasis on user influence in systems development. Knowledge from future system users, considered experts in their work, is paramount for successful systems design. The forms and degree of involvement may vary—for example, representative or direct involvement, consultants, or collaborators—as does the degree of actual influence and power. In addition, user participation is critically important to expanding a foundational knowledge upon which systems are built, enabling the development of realistic expectations and thus reducing resistance to change.

Such inclusive “shared leadership” activities aim to increase workplace democracy by inviting and enabling organizational members to participate in deci-

sions likely to affect their work. Throughout, the aim is to concurrently advance technical, social, political, and individual development. This is achieved through working with organizations, groups, and individuals in a variety of settings, and managing shifting and often unpredictable relationships between people and what they value. In applying this Scandinavian inspired approach, we have intentionally encouraged creativity and collectivity, people and perspectives, cooperation and negotiation—all of which is open to discussion and examination among participants, thereby changing the nature of both work and the workplace.

Grounded Theory: Informed Learning

From the outset, this socio-political orientation was successfully paired with an Australian theoretical approach that acknowledges the catalytic effect of information encounters which occur within enabling contexts that further learning. This notion of advancing disciplinary mastery concurrent with transferable information literacy proficiencies was originally described in 1997 by Christine Bruce as “relational information literacy”⁵ More recently, Bruce has presented the conception of “informed learning,”⁶ linking information literacy and workplace performance.⁷ She reasons that, for potential learning to occur, information encounters must be experienced as sufficiently “contextualized” to activate and extend prior understanding. Additionally, workplace circumstances must encourage reflection at both an individual and collective level and, in turn, dialogue must promote engagement with information for learning and transference of new insights to novel circumstances.

At its essence, informed learning furthers the simultaneous development of discipline and process learning. In accomplishing this within an information or knowledge organization environment, leaders must appreciatively examine how staff members are experiencing both information use and also information content. Heightened engagement with and learning from these experiences can then be intentionally incorporated into workplace information counters. As staff members experience the efficacy of information usage as empowering, they will evolve an understanding of its practical application in furthering organizational purposes—i.e., they will see informed learning as “a process that should transform both learning and the culture of communities for the better.”⁸

Informed learning, therefore, is about recognizing that new learning experiences lead to understanding the world in new or more complex ways.⁹ It follows then that "working smarter" as an information or knowledge worker requires "making sense" of increasingly more complex information experiences. From the library and information science perspective, this may be expressed through heightened understanding of particular aspects of the professional field. From the information use position, this may be expressed through intentionally diversified experiences with information practices representative of the depth and breadth of the information universe.¹⁰

From a holistic viewpoint, informed learning can be understood as a cyclical process of acquiring information for the purpose of using information for learning.¹¹ Within the realm of professional information practices, this might be expressed by managers as a need for "getting information in, manipulating it, getting it out"¹² and involve a variety of means ranging from standard text-based reports to Web 2.0 enabled communication systems.^{13,14} Over time and with practice, managers develop professional efficacy which, in turn, advances organizational effectiveness, even as they learn how to learn. Increasingly in the field of library and information science, informed learning is demonstrated through "evidence-based"¹⁵ decision making, prompting rich workplace dialogue on what constitutes authoritative evidence.¹⁶⁻¹⁸

In a highly complementary fashion, Australian researcher Lloyd has offered a rich conception of the workplace environment which characterizes the collection and interactive nature of "working smarter" in contemporary information and knowledge organizations. In amplifying Bruce's theories, Lloyd's research-generated findings suggest that informed learning involves collaborative, socio-cultural practices within a context specific environment.^{19,20} Consisting of a constellation of skills, practices and processes,²¹ these collaborative information practices further the construction of shared professional meanings and the development of collective outcomes through situated engagement with information. These contextualizing experiences surface can, over time and with practice, nurture conceptions²² with transformative implications. For instance, when diverse lenses are intentionally employed to view information and knowledge production, workplace practices challenge existing social practices and power relationships; question im-

plicit and explicit assumptions and meanings; examine stakeholders' agendas and relative privileges; and reflect upon what constitutes knowledge and authority.²³

Informed workplace learning, therefore, develops within a workplace context which is collectively experienced at both group and organizational levels. As identified by Billett,²⁴ four key sources of workplace learning encompass the activities of work, the workplace, other workers, and the practices of listening and observing. Similarly, Lloyd²⁵ found that workplace proficiency is a context specific learning process that connects information sources in the workplace with the learning practices required to access them. The close correspondence between information experience facets and everyday workplace activities²⁶ suggests the necessity of making learning explicit within the professional practices of both individuals and organizations. Our Australia inspired organizational leadership model acknowledges this point in proposing "thought leadership" and "culture shaping" roles that facilitate the conversion from individual to collective views, as well as the integration of learning within situated workplace contexts.

Learning Framework

In developing a framework for "smarter thinking" in the workplace, inclusive Scandinavian participatory design principles are combined with reflective Australian information practices to cultivate informed employees who are engaged, enabled, and enriched by the social, procedural, and physical information that constitutes their information universe. We emphasize the creation of purposeful socialization processes and workplace contexts that facilitate meaningful workplace information encounters. Over time and with practice, this approach evolves collaborative inquiry processes, fostered largely by informal workplace social relationships that encourage engagement with and draw meaning from social and physical information sources as well as from textual knowledge sources.²⁷ In other words, information exchange and knowledge creation occurs through everyday social interactions with colleagues.^{28,29}

Within this context, an organization is conceptualized as a purposeful social interaction system³⁰ in which collective capabilities develop through workplace socialization processes.³¹ An organization's knowledge vision, then, must recognize the impor-

tance of both establishing a sustainable organizational environment that encourages and enables social interactions and also promotes investigation and negotiation of the interests, judgments, and decisions through which people learn interdependently.³² It naturally follows that workplace “culture” serves as a shared basis of appreciation and action developed through organizational communication.³³

In such a workplace learning environment, knowledge emerges through “meaningful” encounters that activate prior understanding within individuals and among groups. To animate learning, information encounters must be adequately situated and purposefully guided, as depicted in the Figure 1 representation of a reflective evidence-based practice process.³⁴ This cyclical process for cultivating workplace information literacy has the potential to sustain and grow knowledge flow when it is embedded into organizational work practices.

The essence of this catalytic process—whereby information instigates learning—depends on cultivating experiential relationships with topics and surfacing relational thinking about ideas.³⁵ Such a “constellation of skills, practices and processes”³⁶ serves to connect information sources in the workplace with the transferable learning practices required to access them, thereby facilitating the conversion from individual to collective capacity for practices and competencies. These proficiencies include asking good questions, selecting authoritative sources, evaluating

multiple perspectives, organizing emerging insights, and communicating them to inform, educate, and influence—the intended outcomes of national information literacy agendas worldwide. This intentional learning focus anticipates contemporary information and knowledge organizations’ urgent need to survive volatile changes in internal and external circumstances through nimble responsiveness. In other words, fueled by an information literate-ready workforce, organizations must become capable of “pushing the edge” of traditional professional boundaries.

Organizational Research Outcomes

Learning assessments by an external evaluator identified significant outcomes from application of reflective evidence-based practices and organizational structures. For instance, in working with raw data, librarians grew to appreciate the discriminating distinctions between data, information, and knowledge. The subtle but critical difference between “data” selected or attended to and “information”, meaningful selected data in a context, prepared them to desire “knowledge”, larger, longer-living structures of information. For professionals accustomed to making access decisions for authoritative refereed literature but not working with the ideas embodied within those resources, reflective evidence-based inquiry processes served to develop both contextual and situated perspectives on user needs and organizational priorities.

Over time, as project participants internalized this understanding, their work priorities reflected that, in the conversion of data to knowledge, data becomes more valuable at the point that it is transformed into information within a context. For instance, in one institution, librarians experienced this early on when they reflected together upon the service usage statistics gathered and reported annually. The group had never before analyzed and interpreted this data set. Through leader-guided discussion, selected data proved informing. In furthering the cyclical process, librarians compared usage and resource patterns over time, thereby transforming declining transaction numbers into information. Resultant insights both improved situational understanding and advanced “sense making” capabilities. Through such ongoing conversation-based, data-driven inquiry, librarians developed the shared understanding necessary for repurposing and reorganizing workplace priorities.

Of unanticipated yet significant importance,

Figure 1. Reflective Evidence-based Practice Process



the nature of this robust inquiry process encouraged participants to move beyond previously circumscribed professional boundaries in librarianship that permit "getting to" but discourage "getting into" domain content. As librarians exercised their information capabilities, as reported elsewhere for other industries,³⁷⁻⁴¹ through explicit incorporation of "sense making" and "meaning making" into their professional repertoire, their boundaries of concern and influence expanded.

Throughout, librarians built collective capacity to frame appropriate questions, select authoritative resources, interpret and apply richly textured insights that accelerated sound decision making concerning work purposes, procedures, and relationships. In the process, organizational participants reported increasing satisfaction with experiencing information literacy (learning), reflecting on experience (becoming aware of learning), and applying experiential insights to novel contexts (transfer of learning). The latter proficiencies were cultivated through leader-led participant coaching. Increasingly complex learning activities cultivated the transferable capabilities of identifying and framing questions, gathering and evaluating information, organizing and synthesizing information, and presenting learning to inform and advise. Learning, therefore, emerged out of progressively ambitious evidence-based collaborative inquiry processes.

Organizational Leadership

Responsibility for creating a robust organizational learning environment, which activates and furthers workplace information literacy, ultimately resides with the organizational leader. The leader assumes the enabling role of workplace environment architect. In the roles of "thought leader" and "culture shaper", the leader's actions are critically important for making and sustaining organizational change and fostering workplace information literacy. Given that aspiration, four critically important leadership functions emerge.

1. Role model. The leader explicitly values evidence-based decision making, problem solving, and organizational assessment. S/he consistently models workplace information literacy aspirations. For example, in a discussion among team members, the leader reinforces the importance of information exchange and reflective dialogue to advance collective knowledge. In making administrative decisions, s/he employs collaborative information practices.

2. Relational context. The leader provides the contextualizing framework and proposes reflective inquiry processes that aim to explore, compare, evaluate, and decide. In this way, the workplace culture comes to value rich relational information experiences that produce new insights, advance discipline mastery, and cultivate transferable capabilities.

3. Learning coach. The leader instills and advances organizational effectiveness by encouraging and rewarding pursuit of improved methods for creating contextual meaning and advancing transferable proficiencies. S/he uses pilot projects to insinuate "smarter thinking" into the workplace through providing reflective evidence-based thinking opportunities. By structuring experiences to reveal the value of dialogue and reflection, the leader furthers appreciation for and exercise of collaborative inquiry.

4. Knowledge facilitator. Finally, the leader infuses shared knowledge into both formal and informal socialization activities, for the purpose of institutionalizing organizational memory. Through appropriate learning strategies, such as explicating internal reports through in house forums and consultant-delivered workshops, the leader creates new stories and generates new meanings which anticipate ideal realities. The leader also actively exploits technologies to advance information exchange and knowledge creation.

Throughout, an organizational leader fosters and sustains workplace socialization and organizational learning processes to support informed learning. Over time, workplace information literacy is organically enhanced through meaningful, "naturally occurring" encounters within the social, procedural and physical information environment. This transforms organizational culture from reactive to proactive and generative, enabled by rich relational information experiences and social interaction opportunities among workplace participants and, increasingly, organizational beneficiaries.

Lessons Learned and Transferable Implications

Robust organizational processes, purposes, and relationships require initiating and sustaining the socialization processes that enable effective information practices and advance workplace learning. This occurs easily within an appreciative setting created by a leader who nurtures an enabling workplace learning environment in which individuals exercise power-

ful inquiry tools and reflective practices to “learn the way” for and with present and potential library beneficiaries.⁴²

Within this setting, workplace learning processes inform collaborative information practices for initiating dialogue, creating meaning, forming intentions, and taking action. Such rich context can guide iterative processes for evaluating meaningful data, comparing and contrasting multiple interpretations, infusing reflective insights, and pursuing unsolved curiosities. Over time and with practice, these habits of mind evolve into a continuous learning process that challenges existing ways of seeing and doing. As this occurs, it also informs co-creation of organizational futures characterized by nimble responsiveness. This “ideal future”⁴³ requires re-invention of organizational structure, service priorities, and staff assignments, guided by organizational leaders who fostered the application and advancement of information literacy, knowledge generation, and collaborative learning for and with user constituents. This requires revisiting and re-inventing professional roles, campus relationships, and library institutions defined by industrial age models. In so doing, librarians move from traditional information gatekeeper functions to fulfill new knowledge enabling opportunities.

This holistic organizational learning framework can overtly guide library staff members’ performance of day-to-day workplace activities as they relearn how to engage with information, co-workers, stakeholders, and users. As their new roles begin to extend well beyond the boundaries of library units and library walls, professionals and paraprofessionals will become empowered and (re)socialized by co-created language and tools for discussing and analyzing complexities and interdependencies within an extended universe of organizational influence.

Notes

1. Adams, D. “Information overload.” *Sydney Morning Herald*, December 8, 2005, <http://www.smh.com.au/articles/2005/12/06/1133829599706.html>.

2. Somerville, Mary M., and Anita Mirijamdotter. “Working smarter: An applied model for “better thinking” in dynamic information organizations”. In *Currents and convergence—Navigating the rivers of change: Proceedings of the 12th National Conference of the Association of College and Research Libraries (ACRL), Minneapolis, Minnesota*, Association of College and Research Libraries, 103-111.

Chicago: Association of College and Research Libraries, 2005.

3. Dahlbom, B. “The new informatics.” *Scandinavian Journal of Information Systems* 8, no. 2 (1996): 29-48.

4. Bratteteig, T. “Making change. Dealing with relations between design and use.” PhD diss., University of Oslo, Norway, 2003, <http://heim.ifi.uio.no/~tone/Publications/making-change.pdf>.

5. Bruce, Christine S. *The Seven Faces of Information Literacy*. Blackwood, South Australia: Auslib Press, 1997.

6. Bruce, Christine S. *Informed Learning*. Chicago: Association of College & Research Libraries, 2008.

7. Goad, T. *Information Literacy and Workplace Performance*. Westport, CT: Quorum Books, 2002.

8. Breivik, P. “Foreword”. In *Information Literacy Around the World: Advances in Programs and Research*, edited by Christine Bruce & Phillip Candy, xi. Riverina, New South Wales, Australia: Centre for Information Studies, Charles Sturt University, 2000.

9. Marton, F., and Booth, S. *Learning and Awareness*. Mahwah, NJ: Erlbaum, 1997.

10. Bruce, Christine, Sylvia Edwards and Mandy Lupton. “Six frames for information literacy education: a conceptual framework for interpreting the relationships between theory and practice”. *Innovations in Teaching and Learning Information and Computer Science* 5, no. 1 (2006), http://www.ics.heacademy.ac.uk/italics/vol5-1/pdf/six-frames_final%20_1_.pdf.

11. Lupton, Mandy. “Information literacy and learning.” PhD diss., Queensland University of Technology, Australia, 2008, <http://adt.library.qut.edu.au>.

12. Bruce, *Informed Learning*, 94.

13. Howard, Zaana, and Mary M. Somerville. “Building knowledge capabilities: An organisational learning approach”. Paper presented at *Harnessing Knowledge Management to Build Communities—Proceedings of the 11th Annual Conference on Knowledge Management and Intelligent Decision Support, Ballarat, Australia*, 2008.

14. Somerville, Mary M., and Gordon Yusko. “Strategic organizational direction setting: A workplace learning opportunity”. In *Reflecting on Successes and Framing Futures—Proceedings of the 5th International Lifelong Learning Conference, Yeppoon, Australia*, 366-369. Rockhampton, Queensland, Australia: Central Queensland University, 2008.

15. Partridge, Helen, Claire Thorpe, Sylvia Edwards, and Gillian Hallam. “The practitioner’s experience and conception of library and information based practice: An exploratory analysis”. Paper presented at *4th International*

Library and Information Practice Based Conference, Chapel Hill-Durham, North Carolina, 2007, <http://www.eblip4.unc.edu/papers/Partridge.pdf>.

16. Somerville, Mary M., Erika Rogers, Anita Mirijamdotter, and Helen Partridge. "Collaborative evidence-based information practice: The Cal Poly digital learning initiative." In *Evidence-Based Librarianship: Case Studies and Active Learning Exercises*, edited by E. Connor, 141-161. Oxford, England: Chandos Publishing, 2007.

17. Somerville, Mary M. and N. Brar. "A collaborative evidence-based approach for digital library project design." *The Electronic Library* 27, no. 3 (2009), in press.

18. Mirijamdotter, Anita, and Mary M. Somerville. "Collaborative design: An SSM-enabled organizational learning approach." *International Journal of Information Technologies and Systems Approach* 2, no. 1 (2009): 48-69.

19. Lloyd, Annemarie. "Working (in)formation: conceptualizing information literacy in the workplace." In *Lifelong learning: whose responsibility and what is your contribution? Refereed papers from the 3rd International Lifelong Learning Conference, Yeppoon, Queensland, Australia, 218-224*. Rockhampton, Queensland, Australia: Central Queensland University Press, 2004.

20. Lloyd, Annemarie. "Information literacy: different contexts, different concepts, different truths?" *Journal of Librarianship and Information Science* 37, no.2, (2005): 82-88.

21. Lloyd, Annemarie. "Information literacy landscapes: an emerging picture". *Journal of Documentation* 62 no. 5, (2006): 570-583.

22. Bruce, Edwards and Lupton, *Six Frames for Information Literacy Education*.

23. Bruce, *Informed Learning*.

24. Billett, S. "Guided learning in the workplace." In *Understanding learning at work*, edited by D. Boud and J. Garrick. Routledge: London, 1999.

25. Lloyd, Annemarie. "No man (or woman) is an island: information literacy, affordances, and communities of practices". *Australian Library Journal* 54 no. 3, (2005): 230-237.

26. Bruce, C. "Workplace experiences of information literacy." *International Journal of Information Management* 19 no. 1, (1999): 33-47.

27. Lloyd, *Information Literacy Landscapes*.

28. Howard and Somerville, *Building Knowledge Capabilities*.

29. Kirk, J. "Information and work: Extending the roles of information professionals". In *Challenging Ideas—Pro-*

ceedings of the ALLA 2004 Biennial Conference, 21-24. Kingston, Australia: Australia Library and Information Association, 2004, <http://conferences.alia.org.au/alia2004/pdfs.kirk.j.paper.pdf>.

30. Checkland, P. B. and S. Holwell. "Action research: its nature and validity". *Systemic Practice and Action Research* 11, no. 1, (1998): 9-21.

31. Lloyd, *Information literacy: different contexts*.

32. Stacey, R. "Learning as an activity of interdependent people". *The Learning Organisation* 10, no. 6, (2003): 325-331.

33. Jenlink, Patrick M., and Bela H. Banathy. "Dialogue: conversation as culture building and consciousness evolving". In *Dialogue as a Means of Collective Communication*, edited by Bela Banathy and Patrick M. Jenlink, 2-14. New York: Kluwer Academic, 2005.

34. Callahan, Anne, and Zaana Howard. "Planning for success: reprioritising, repurposing and retooling with results." In *Reflecting on Successes and Framing Futures—Proceedings of the 5th International Lifelong Learning Conference, Yeppoon, Australia, 85-90*. Rockhampton, Queensland, Australia: Central Queensland University, 2008.

35. Howard and Somerville, *Building Knowledge Capabilities*.

36. Lloyd, *Information Literacy Landscapes*.

37. Cheuk, Bonnie W. "Exploring information literacy in the workplace: A process approach." In *Information literacy around the world: Advances in Programs and Research*, edited by Christine Bruce & Phillip Candy, 177-192. Riverina, Australia: Centre for Information Studies, Charles Sturt University, 2002.

38. Kuhlthau, C. C. "The role of experience in the information search process of an early career information worker: Perceptions of uncertainty, complexity, construction, and sources." *Journal of the American Society for Information Science* 50, no. 5, (1999): 399-412.

39. Kuhlthau, C. C. and S. L. Tama. "Information search processes of lawyers: A call for "just for me" information services." *Journal of Documentation* 57, no. 1, (2001): 25-43.

40. Smith, E., and C. Martina. "Keeping the dough rising: Information in the workplace with reference to the bakery trade." In *Lifelong Learning: Whose Responsibility and What is Your Contribution? Refereed Papers from the 3rd Lifelong Learning Conference*. Rockhampton, Queensland, Australia: Central Queensland University, 2004, <http://lifelonglearning.cqu.edu.au/2004/papers>.

41. Al-Daihani, S. M., et. al. "A study of the information literacy capabilities of the Kuwaiti police officers." *The*

Electronic Library 25, no. 5, (2007): 613-26.

42. Davis, Hiram L., and Mary M. Somerville. "Learning our way to change: Improved institutional alignment." *New Library World* 107, no. 3/4, (2006): 127-140.

43. Somerville, Mary M., Malia E. Huston, and Anita Mirijamdotter. "Building on what we know: Staff development in the digital age." *The Electronic Library* 23, no. 4, (2005): 480-491.