Challenges to Teaching Evaluation of Online Information: A View from LM_NET

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A previous version of this paper was published in *Papers of the Treasure Mountain Research Retreat 14*, Eds. David V. Loertscher and Marcia Mardis, 234–252 (Reno, Nevada: October 24, 2007).

An analysis of postings on the LM_NET discussion list was conducted to better understand school library media specialist (SLMS) perceptions of the potential effect of structural challenges on their role in teaching Web evaluation skills. Structural challenges are institutional in the form of government regulation and school culture, and are defined in terms of a three facets: (1) high stakes testing; (2) "everyone in charge, no one in charge" (in which professional roles and school norms vary or are poorly defined); and (3) limited access to digital media. Results reveal relatively little discussion of the effect of high-stakes testing despite the high profile of this issue in the education literature and the mainstream media. The "everyone in charge, no one in charge" category garnered the most emotionally charged responses and was further subdivided into discussions of professional standards and of defining and defending professional roles. The limited access category addressed externally imposed limitations (generally in the form of filtering software) as well as the occurrence of self-limiting behaviors and choices. A prevailing theme throughout the discussions was the "workaround," in which SLMSs attempt to get by or even thrive within a set of circumstances that are beyond their control.

Introduction

School library media specialists (SLMSs) know that although most young Americans are well versed in the use of digital technologies, many are novices when it comes to searching, selecting, and assessing the meaning and value of the information they find online (Valenza 2006; ETS 2006). Yet efforts to teach online information literacy (IL) skills in today's schooling environment are limited by a number of significant challenges, both institutional and pedagogical (Harris 2008; van't Hooft 2007; Bell 2007; Sutton

2006). Even though young people now have more access at school to computers and the Internet than ever before (NCES 2005), the frequency with which these tools are used and the ways in which they are used at school differ markedly from their use at home (Hitlin and Rainie 2005). For all practical purposes, young people have unfettered access to digital tools *outside* of school. They are exposed to a wide range of unvetted information, participate in online social networks, access a wide range of media, and create content themselves. *Inside* of school, young people experience an environment that is highly protective (in the name of safety) and limited in scope (in the name of the educational mission). In such an environment, where the common tools of youth parlance cannot be accessed, it can be quite challenging to teach students to evaluate the credibility of the information they find online.

In an earlier analysis of the challenges that confront educators when trying to teach credibility assessment and the evaluation of digital media, I proposed a model that describes these difficulties in terms of *structural* challenges and *dynamic* challenges (Harris 2008). Structural challenges are institutional in the form of government regulation and school policies and procedures. Dynamic challenges are the processes and relationships that occur as a consequence of young people's cognitive development and the inherent difficulties of navigating a complex Web environment.

This study focuses on the *structural* challenges and how their influence might be perceived in the community of SLMSs. Do significant numbers of SLMSs view the structural restrictions of the contemporary schooling environment as having a deleterious effect on their ability to teach the evaluation of online information? The model subdivides these challenges into three general categories:

High-Stakes Testing

High-stakes testing describes an environment of accountability that has resulted in the proliferation of mandated testing and includes such legislation as the No Child Left Behind Act (NCLB) of 2001. Many in the education community feel that the need to address high-stakes testing leaves limited opportunities to teach skills and subjects that are not included on standardized tests, including such topics as IL (Buchanan 2008; CEP 2006; Kim and Sunderman 2005; Sunderman et al. 2004; Zygmunt-Fillwalk and Bilello 2005).

Everyone In Charge, No One In Charge

Although the federal government makes its mark on education through legislation like NCLB, the American system of education is otherwise highly decentralized. Education is locally funded and, in large part, locally controlled. Individual states set graduation requirements and local school districts design curricula to meet them. Instead of being subject to federal control, public schools must meet the standards of regional accrediting bodies and the subject-area standards set by state boards of education. There is no single, comprehensive national authority that requires the presence of library services in schools, let alone the teaching of IL, digital or otherwise. While evaluation skills can be identified

in various professional society standards documents (e.g., ISTE 2007; NCTE and IRA 1996) and are at the heart of library association standards (AASL and AECT 1998; AASL 2007), compliance with these standards is strictly voluntary and is subject to the priorities of local school boards and available resources. A consequence of this status quo is that the teaching role of the SLMS may need to be defined from setting to setting.

Limited Access to Digital Media

Student access to digital media is limited by a number of factors. Public and school libraries that receive E-Rate discounts for Internet access must comply with the Children's Internet Protection Act (CIPA), which requires the installation of Internet filtering software. But filtering software is expensive to purchase, requires sophisticated network administration skills to install and maintain, and both underblocks and overblocks online information (Kranich 2004; Sutton 2006). Teachers themselves introduce filter-style limitations by restricting their students to prescreened content, even at more advanced levels of instruction. If most school Internet access is vetted in this way, students have little opportunity to learn important searching and evaluation skills (Heine 2006). Access also is limited by generic acceptable use policies (AUP) that allow only curriculum-related use despite the fact that school libraries have long offered noncurricular reading materials such as recreational magazines and nonrequired fiction.

Research Questions

As stated, this study focuses solely on structural challenges, the institutionalized factors that can inhibit educators' efforts to teach online information evaluation, and *how those factors are perceived and discussed* by working SLMSs. I was interested in finding out if these challenges are regarded as significant concerns and, if so, how the concerns are expressed in the professional discourse of SLMSs. Are some challenges considered more important than others? Is there a particular context for the concerns? In other words, are they part of a larger set of issues that affect SLMSs?

Method

To begin an exploration of these questions, I conducted an analysis of a six-month period of discussions held on LM_NET (www.eduref.org/lm_net), a national electronic discussion list used heavily by SLMSs and those interested in the field. Alice Yucht describes LM_NET as a "cyber-faculty room" where SLMSs can discuss the unique concerns that shape their professional lives (Yucht 2001, 49). She compares the social structure of the LM_NET community to that of its physical counterpart, one that includes such characters as the old-timers, the experienced subs, the recent grads, the smattering of administrators, and the interns and student teachers. The various players may not always agree with one another or even get along all the time, but all appreciate the sense of collegiality the list provides. As with the conversation that goes on in any faculty room, it is important to be careful about generalizations that might be drawn from its content.

Approximately 16,000 individuals subscribe to LM_NET, although there is no way to determine how many are active participants at any given time. As much as any existing indicator, however, LM_NET can be considered reasonably reflective of the concerns and interests of a broad-based cross-section of practitioners in the field. I chose to examine the existing data provided by postings on LM_NET because I was interested in finding out what concerns and issues spontaneously emerge and naturally rise to the top. A next step would be to conduct interviews or case studies, which would allow a more in-depth and nuanced exploration of these questions.

Very little research has been conducted on LM_NET itself, whether on its role in the profession or on the nature of its content. Some have reported on the results of specific queries posed to the list (e.g., Despines 2001; Bell 2007), indicating some level of confidence by the researchers for reporting general impressions. The idea of studying electronic discussion lists is not a new one. Lists other than LM_NET have been the subject of content analysis by scholars, both for the purpose of studying the lists themselves as well as for the purpose of studying participants' views on a topic of interest to list members. For example, Bar-Ilan and Assouline analyzed the content of PUBYAC (an online discussion list dealing with children and young adult services in public libraries) in an effort to understand how the introduction of new information technologies affects the work of the librarian (1997). Levin studied the effect of legal online discussion lists on the professional development and ethical decision making of lawyers (2005). Coco and Woodward used their analyses of pagan e-mail discussion lists to understand the pagan community's concerns regarding authenticity in the practice and representation of their craft (2007).

It is important to note that e-mail discussion lists are not the only online platforms for informal communication and exchange of professional information. Recent developments in online communication technologies have dispersed electronic discourse, which now takes place in a variety of venues. For example, some professional discussion occurs on blogs, where a topic is initiated by an individual blogger and the conversation takes place in the comments section. Social networking tools allow communities to develop and contain online communication within their virtual walls. These range from special interest communities within Facebook (a closed community within a closed community) to standalone communities like the TeacherlibrarianNing (http://teacherlibrarian.ning.com) that are also visible to nonmembers. Microblogging services like Twitter enable "back-channel" conversations between professionals who follow one another's updates. With all these choices, it is no surprise that postings to LM_NET are in a steady, though not precipitous, decline. There were 16,089 postings in 2006, 15,724 in 2007, and 15,276 in 2008. The numbers are still impressive, though, and relatively robust. It is probably safe to say that no other single online community yet comes close.

LM_NET messages are protected under copyright law, and readers are asked to remember to cite LM_NET and the original sender when material is used outside of the LM_NET group (LM_NET 2003). Posters are warned that messages sent to the list may be accessed by the general public. From a legal perspective, journalists and others are

free to read the public archives and quote from them—as was the case when *Publisher's Weekly* (Maughan 2007) and the *New York Times* (Bosman 2007) reported on LM_NET conversations in their coverage of librarians' response to the word "scrotum" in the Newbery award-winning title *The Higher Power of Lucky* (Patron 2006). At the same time, it is critical to respect and maintain the privacy of the members of the community when conducting an unobtrusive study such as this one. Therefore posters' names are not revealed in the analysis, and postings are paraphrased to protect the identities of their authors. The goals of the study were not concerned with identifying individual voices, but rather in capturing the different *threads* of perception and opinion within the LM_NET community as a whole.

Messages posted during the six-month period of January 2007 through June 2007 were read using the online LM_NET archives (www.eduref.org/lm_net/archive). This span of time was selected to capture experiences and concerns expressed during a complete semester. Messages were selected for coding if they addressed, either directly or indirectly, the theme of teaching Web evaluation skills. Appendix A is an expanded list of the topics that referenced this theme in some fashion. Appendix B is a list of topics *not* considered for inclusion because they fell outside of this rubric. Discussions of structural challenges or barriers to teaching evaluation skills were of particular interest. I initially separated messages into four categories—a category for general queries about teaching website evaluation and a category for each of the three types of structural challenges that were outlined in the original model. As subthemes emerged, the coding process became recursive, allowing for the coding of messages into more refined subcategories.

Although these results are technically quantifiable, a numerical accounting and distribution is not to be considered highly meaningful. There are a number of reasons why this is so. First, LM_NET uses a "Target/Hit" system in which a person who poses a question (the "target") collects responses off-list by private e-mail, and then posts a compilation of the responses (the "hit"). Therefore a single post may actually represent multiple expressions of opinion. Second, at any given time, a hot topic might dominate discussion threads, effectively discouraging discussion of other topics. This situation occurred when conversation was dominated by the aforementioned controversy over the word "scrotum" in the Newbery award-winning book, *The Higher Power of Lucky* (Patron 2006). Third, as with most electronic discussion lists, there are a significant number of "low-content" messages on LM_NET. These are messages that are sent by mistake, protocol messages from the discussion list owners, corrections to previous posts, and the like. Therefore the numbers that do emerge are best seen as very general indicators that further characterize what is first and foremost a discourse analysis.

Additional limitations of this method must be taken into consideration. LM_NET represents the points of view of those who participate in the community and may not reflect the feelings of the many SLMSs who do not (or do, but simply "lurk" on the list). The community is populated by professionals who are oriented towards this type of online communication, which excludes the views of those who are not. Discussion is often dominated by those who feel very strongly about a topic, which tends to diminish the voices of those whose views are more moderate. For all these reasons, conversations

that take place in the cyber-faculty room, like the physical faculty room, cannot be generalized to represent the sentiments of the faculty as a whole. Finally, it is important to note that the process of message selection and coding is itself subjective. It may be that another analysis of the same content would produce results that differ from what is presented here. Future research also might explore individual categories and subcategories, each of which could be much more finely granulated than they are in this study.

Coding

The recursive process of examining postings produced the following categories and subcategories:

- **GQ:** General queries about teaching the evaluation of online information
- **HST:** Postings about high-stakes testing, NCLB, and associated issues
- **ECNC:** "Everyone in charge, no one in charge"—postings about problems associated with the lack of standardization in teaching IL skills
  - **DR:** ECNC postings about defining (and defending) the role of the SLMS
  - **S:** ECNC postings about standards bodies, standards documents, and associated issues
  - **WA:** ECNC postings describing workarounds developed to deal with problematic ECNC situations
- **LA**: Postings about limited access to digital media
  - **SL:** (Self-limiting) LA postings describing situations in which limited access is self-imposed by SLMSs
  - **WA:** LA postings describing workarounds developed to deal with limited access situations

Much more will be said about these categories as each is discussed in the results section. However, some general comments may be helpful. These codes are not mutually exclusive. For example, a January discussion of restrictive policies toward Web 2.0 applications was initially coded as LA, then ultimately evolved into an ECNC discussion as some participants made the case that limiting access to digital media made it difficult to achieve standards. Quite often, particularly in the case of a "hit" posting, a discussion that fit primarily into one category touched on core issues of another category. For example, a GQ discussion about teaching students the pitfalls of using online translation services elicited a comment reporting that such services were blocked in the poster's school, an LA issue. This crossover phenomenon again points to the need for caution in interpreting the significance of the total numbers within categories.

In the context of the ECNC and LA categories, "workaround" means finding a method—generally outside standard operating procedures—to solve a problem, rather than solving the problem by taking it through authorized channels. Descriptions of workarounds may also include the poster's rationale, such as making a choice to pick one's battles. In such cases, the poster described surrendering the purely principled stand on a particular issue

in favor of increasing chances for obtaining a clear win on other issues that were deemed more important.

Some postings that would have otherwise been considered out of scope for this study (see appendix B) were still included in the analysis. These exceptions occurred when an otherwise unrelated conversation explicitly touched on teaching Web evaluation. For example, a discussion of staffing levels may have included concerns about having enough professional staff to teach Web evaluation. I included some administrative or process postings when they clearly related to the teaching of Web evaluation, as did a number of postings on fixed versus flexible scheduling, collaboration with teachers, computer lab rules, and website hoaxes (which might otherwise be considered resources discussions). Similarly, discussions of the read-write Web and Web 2.0 often led to LA discussions, which in turn had bearing on Web evaluation instruction. However, I did not include in this analysis purely technical discussions about how to set up various Web 2.0 services (e.g., blogs and wikis). Some topically unrelated postings were included because the contributors used creative spellings and other workarounds to prevent their messages from being blocked by LM_NET recipients' filters (e.g., spelling "homosexuality" as "homo*exuality" in a post).

Results and Discussion

Despite the caveats described earlier about quantifying these results, the aggregate numbers do reveal an impressionistic picture. For the period January through June 2007, the total number of postings on LM_NET was 8,189. Of those, the total number of postings on the subject of teaching Web evaluation was 468. That total broke down into the categories as shown in table 1. Note that ECNC postings as a whole were further divided into two subcategories (S and DR), but that only *selected* LA postings were further divided into two subcategories (SL and WA). Finally, some of the ECNC postings also exhibited workaround (WA) characteristics, typically in the form of hints or tips. These were vague enough that a strict ECNC-WA numerical accounting seemed unhelpful. See table 1.

General Queries (GQ)

Postings that were assigned to this category were the general, how-to queries participants posed about teaching Web evaluation. Specifically, these were questions about methods of teaching, resources and websites to use, and activities participants found to be successful. For example, within a thread about online translation services, one participant described an activity she used to help students understand the pitfalls of such services. A number of participants posted messages about effective ways to teach students about Wikipedia, the popular, collaboratively written encyclopedia. One suggested strategy was to have students corroborate information they found in Wikipedia with information they found in other sources. Some threads addressed Web evaluation instruction more by implication than by direct reference. One such case was a discussion about student-created webquests. Participants described webquests in terms of their potential as vehicles for teaching IL and promoting higher-order thinking. The subtext was that a core

feature of webquest creation was learning to evaluate websites. The GQ category also included queries about hoax sites, with participants either asking for some examples to use in teaching or for help in determining whether or not a site actually was a hoax, a scam site, or a legitimate source of information.

The fact that there were relatively few postings in this category as compared to the aggregate total is interesting. Perhaps it is attributable to the fact that people who post messages to an electronic discussion list do so because they have a thorny problem to resolve or wish to share their views on a controversial topic. Simple informational queries are often easier to address by other means.

High-Stakes Testing (HST)

Perhaps the most unexpected finding to emerge from this discourse analysis was the low occurrence of postings on the topic of today's high-stakes testing environment. As much attention as this issue receives in both the mainstream media and in education-related publications, it apparently is not high on LM_NET participants' radars as being considered a deterrent to teaching IL skills. This absence of concern was surprising, particularly given the public concerns expressed by other content specialists about finding the time to teach curriculum that "is not on the test," such as social studies and the fine arts (Buchanan 2008; Darling-Hammond 2007; Sunderman et al. 2004).

One possible explanation for the lack of message traffic on this topic is that LM_NET posters felt high-stakes testing was a battle that was simply impossible to fight. Legislation such as NCLB has made high-stakes testing an incontrovertible fact of life and might not have been considered worth valuable time and energy to discuss and debate. The conversations that did take place generally lamented the status quo. Participants observed that teachers were foregoing inquiry and research projects because they had to focus on test preparation. Posters noted that flexible scheduling would "go to waste" because teachers did not have time for activities that would not be tested. There were also requests for help in assessing how to establish that library programs supported NCLB and student achievement in measurable ways, or how other "ancillary" teaching staff could demonstrate that they contributed to the improvement of test scores. Also included in this analysis were posts that did not directly address the effect of high-stakes testing on Web evaluation instruction but discussed issues that had an effect by implication, such as restrictive student scheduling and library closures for testing.

Everyone In Charge, No One In Charge (ECNC)

In general, the ECNC messages were the most emotionally charged of all the categories. I sorted all posts from this category into two subcategories to further clarify and define the concerns within the topic:

Defining/Defending Role (DR)

In the absence of standardized requirements for school libraries and librarians—let alone for teaching IL skills—SLMSs often found themselves on the defensive in their schools. Despite evidence that students do not possess adequate IL skills (CIBER 2008; ETS 2006), LM_NET posters reported that teachers and administrators frequently did not recognize either that the problem existed or that SLMSs were the professionals who could handle this deficit. Most of the DR postings addressed either questions of self-identity (who are we and what do we do?) or concerns about how to express this identity to their colleagues.

Certain hot-button issues served as natural catalysts for DR conversations, such as fixed versus flexible scheduling and collaboration with teachers. The fixed/flexible scheduling debate is a perennial topic on LM_NET. Some of the discussions held during the period under study were practical requests for information, such as strategies for handling research projects and teaching IL skills in a fixed-schedule setting. But most of the discourse was characterized by strong feelings and expressions of opinion on either side of the debate. Inevitably, scheduling issues were tied to debates about the role of the library media center and the SLMS.

The discussions regarding collaboration were just as heated, if not more so. January's thread on this topic alone produced fifty-three posts. Participants shared concerns and anxieties about why SMLSs collaborate, how to collaborate, how to connect collaboration to evidence of student achievement, and who might be standing in the way of collaboration. A May discussion of why individual teachers might not collaborate with SLMSs was emblematic of the entire ECNC syndrome. Aside from teachers not understanding *how* to collaborate (which points to issues like school culture and deficits in teacher training), teachers may have felt that there was no mandate to collaborate, that their territory or classroom time was being threatened, or that they simply did not recognize the term "collaboration"—which some considered library jargon rather than standard education terminology. At times, collaboration discussions slipped into conversations about standards, an instance of the DR and S categories overlapping. Participants discussed collaboration in the context of existing IL standards, identifying IL–type standards within the standards of other disciplines, and writing IL standards that other educators could understand. Posters also discussed instances of "competing" literacy collaboration efforts, which might bypass partnership with the school library.

Some of the DR discussions focused on even more fundamental issues, such as the value of the profession itself in today's world. An April response to the question "are librarians obsolete?" elicited sixty-four responses. These postings reflected the familiar ECNC anxieties triggered by other educators not understanding the nature of the SLMS's role and media specialists' difficulties in communicating that role to others. Participants discussed why school librarians might be considered obsolete, citing such examples as district centralization of many core functions (e.g., book selection, processing, and cataloging), automation of routine tasks, customary utilization of library space for nonlibrary purposes (e.g., meetings, testing, and presentations), and even "all information being online." Other posters countered these examples by citing the kinds of work librarians do that may be invisible to administrators and teachers but cannot be automated

or routinized, such as teaching higher-order thinking skills and managing a library operation. The summary message from the latter group of posters was to disagree with the premise that "librarians are obsolete," and to assert instead that "if we don't do something to help people understand who we really are and what we really do, then we'll *be made* obsolete." A more cynical expression of this issue was to claim that it matters more what others *think* you do than what you *actually* do.

The DR category also included discussion of staffing hierarchies in schools, with most participants concurring that SLMSs were never in the group that was considered most essential. A number of posters even cited examples of administrators and teachers who, almost as a point of pride, avoided needing to use the library. Some posters urged fellow SLMSs to ensure their employment security by pursuing alternative training in an area such as educational technology. Others put a more positive spin on this advice. They characterized retraining as retooling, reinvigorating, and redefining one's job skill set to remain responsive to student learning needs. A number of participants opined that librarians' jobs and school libraries would persist, but might be identified by new names. Many posters felt that teaching was the most definitive and important part of the school librarian's role and that librarians who did not teach were the ones who would become obsolete. Others insisted that the individual professional's job responsibilities did not actually make much difference, claiming instead that the only factors of consequence were the attitudes, experiences, and expectations of the administrators in charge. The thread looped back to standards and mandates, with some participants claiming that obsolescence (or irrelevance) was inevitable for any school program that was not mandated. Fixed scheduling was cited as a form of job security for elementary school librarians, as long as teacher preparation time remained a requirement. These posters felt that the fight had to take place at the standards-making level, not the building level.

A number of participants posted variations on the theme that librarians *as a group* would not become obsolete, but that *individual* librarians would if they did not abandon dated practices, adapt well to change, and continue to learn. These sentiments prompted strong defense of some traditional library tasks, which respondents felt kept librarians in touch with student needs and interests, ensured that the library functioned well, and established helpful models for students. For example, if students did not find books in order on the shelves, they would not see a need to put them back in order themselves. These opinions were countered with exhortations to prioritize and to find ways to delegate routine tasks (even to students), so that the core missions of reading advocacy and teaching IL skills would always come first.

Standards (S)

The S subcategory was used for ECNC discussions that focused on state standards and the standards developed by professional organizations. Many of these queries were informational in nature (i.e., not expressed in terms of problems or complaints). Participants shared information about locating standards, interpreting standards, designing curriculum to meet standards, and the like. One prominent theme that emerged was frustration with a status quo in which sets of standards seem to compete, seldom

sharing or incorporating features one from another. This concern came up a number of times in reference to the development of AASL's new *Standards for the 21st-Century Learner* (AASL 2007), which were scheduled to replace *Information Power* (AASL and AECT 1998). Participants expressed interest in seeing the new standards incorporated into state literacy frameworks and at least correlated with the standards of allied organizations, such as the International Society for Technology in Education (2007). Some participants discussed the desirability of uniform standards because they could be used to justify professional positions. This concern with institutionalizing (literally "standardizing") the role of the school librarian overlapped with the DR themes discussed above. Participants also discussed whether or not Web 2.0 skills should be incorporated into learning standards, since they appeared to show promise for improving learning and reflected the thought processes of contemporary learners. A good deal of this discussion touched on LA issues, since many schools did not allow the use of various Web 2.0 tools.

A debate was sparked by a reference to an editorial Carol Simpson wrote (2007) decrying the low percentage of students who demonstrated minimal IL competency on the Educational Testing Service's new Information and Communication Technology (ICT) test. Participants expressed dismay that the designers of the test seemed to be unaware of existing IL standards and the role library professionals played in their implementation. Several posters shared concerns that the existing as well as the new AASL standards were too general and therefore hard to communicate to other professional audiences. Another perspective within this thread argued that SLMSs *do* have a subject area with a well-defined curriculum, and that the profession should not lose sight of the need to teach its own content as well as teach in support of other content areas. Others countered that IL standards must be situated within classroom curriculum standards to be effective and meaningful. If those content standards succeed, then IL standards succeed. The conversation eventually cycled back to advocacy for the *Information Power* standards and for the new standards, which were still under development at the time. Participants were urged to write about IL standards for journals outside the library field and to present at the conferences of other education professionals.

Workarounds (WA)

Some ECNC conversations included various methods participants used to deal with potentially untenable situations. This phenomenon occurred primarily in response to fixed/flexible scheduling concerns and the methods participants employed to make do with a scheduling environment they could not otherwise change. A workaround might be articulated as making lemonade out of lemons when turning a situation toward the positive, rather than agitating unsuccessfully for an unattainable ideal. The collaboration threads included suggestions for enticing teachers to collaborate by "making the teachers look good." Participants also advocated an if you can't beat 'em, join 'em approach. For example, during the discussion of a literacy collaborative movement, participants were urged to emphasize the reading-instruction facets of the school librarian's job.

Limiting Access (LA)

Filtering software was perhaps the hottest topic within the LA category, as might be expected. There were many requests for general information about products and implementation practices. Participants sought recommendations and wanted to know about various products' patterns of overblocking, underblocking, and blocking of online catalog records or subscription database content. Posters asked questions about other schools' policies for filtering specific types of content and the procedures that were used for unblocking specific sites. For the most part, the unblocking procedures that were described were cumbersome, involving multiple individuals and transactions. Participants expressed concerns about filters blocking entire classes of Web tools (e.g., wikis and blogs) as well as specific domains or websites (e.g., Geocities and Wikipedia). In some settings, distinctions between social networking sites and services were not very fine-grained, so that even services with clear educational sponsorship and functions (e.g., Edublogs and professional society wikis) were blocked. Other participants reported tales of over-filtering that were outrageous by any standard. One such story involved LM_NET posts being blocked at a school because a disallowed word for an erectile dysfunction medication was embedded in the word "specialist." Some SLMSs came to LM_NET looking for evidence from other schools that might support the cause of a concern at home. A poster might ask if others could access specific websites or types of content at their schools. The responses would suggest whether or not, for example, the poster's technology department was blocking certain kinds of political content. Many of the posts about filtering issues were written with humor and even sarcasm, along the lines of "I'd really like to show this video to the English classes, but YouTube is blocked at my school. Arghhhh." Or, "Those sources are not (yet) blocked where I teach."

LM_NET posters were frustrated with their role as filter-enforcers. At one point during the study period, they engaged in a lengthy discussion about the proxy servers students often used to bypass filtering software at school, usually to access social networking sites like MySpace and Facebook. The "hit" on this topic consisted of case after case of participants describing how they found students able to connect to the forbidden social networking sites through the use of one proxy server after another. As a group, participants found it very difficult to keep up with the elusive and ever-changing world of filter-defying tools and seemed to feel helpless in the face of students' persistence and inevitable success. Interestingly, there were no instances of participants suggesting that software filtering might not be the appropriate solution for this particular problem. Participants seemed to share the assumption that social networking services had no place in the school environment, and that even though students were finding ways around the filters, SLMSs just had to try harder to find out what students were up to and block faster.

In January, a filtering discussion was broadened to incorporate a larger issue, that of school librarians' frequent lack of control over the technology they were responsible for. For example, many librarians were not only barred from overriding filtering software, they frequently were not allowed to personally update or control the content on their own websites. Instead, they were required to submit requests for changes to the staff members (typically IT staff) who were authorized to make the changes. One thread highlighted a recent trend in which some schools were outsourcing all their website development and maintenance. In those cases, librarians had no control over the look and feel of their Web

presence—nor did any teacher, for that matter. A counterargument was made that chaos might reign if all staff could change the school website and that the answer was responsive technical support (which in some cases actually *was* the SLMS). Some participants shared their home-grown methods for dealing with these restrictions. One SLMS convinced administrators to allow her to set up a book review blog by conducting a great deal of research on blogging and presenting a detailed plan. Another poster reported on an implementation of filtering software that allowed students to submit their own requests to unblock a site in real time. As the recipient of these requests, the poster found a new and valued way to communicate with students, respond to some needs she had not been aware of, take advantage of a few teachable moments, and help the technology department.

Some LA situations were the result of more fundamental deficits in schools, such as insufficient funding for technology or the lack of available technology expertise and administrative support. The discussion list was peppered with queries regarding free Web hosting sites. Some participants were desperate just for physical space for computers. Others were trying to work with recalcitrant or otherwise uncooperative technology staff. Many were stymied by bureaucratic minutiae and tangled administrative policy. One school librarian was poised to experiment with Web 2.0 learning tools, but local school policy dictated that all Web services be locally hosted, even though the software infrastructure for blogs and wikis (PHP and MySQL) was not supported. Some posts revealed frustration with the school librarian's too-frequent role as computer lab monitor and school rule enforcer, which was similar to concerns reflected in ECNC topics.

Included in the LA category were posts that did not explicitly address Web evaluation, but instead described the prohibition of certain classes of online tools. Most of the tools mentioned were social networking sites and Web 2.0 applications. There were also a number of postings about restrictions on hardware devices such as flash drives and MP3 players. The prohibitions against the use of these tools automatically prevented their incorporation in teaching online information evaluation, and were therefore considered an aspect of the LA theme. For similar reasons, postings were included from a lengthy discussion of the delivery mode for LM_NET messages, which focused on whether the service should remain a discussion list or go to a blog format. A notable proportion of participants responded that *all* blogs were blocked on their school servers. Therefore the discussion of substance concerning the best way to follow and participate in LM_NET discussions was sidetracked by the LA issue, even though concerns about teaching Web evaluation were not explicitly mentioned. Similarly, an ongoing discussion of the Julie Amero case (Cowan 2007), in which a substitute teacher was prosecuted for "allowing" students to view pornography online, was included in the analysis because it pointed to related LA issues of inadequate staff training and poor technology implementation. The problem of limited access was exacerbated by school staff who were unfamiliar with technology, were not well versed in online information evaluation, and who worked with filtering and security systems that were not properly maintained.

A subset of LA posts was further defined by sorting them into the subcategories Self-limiting (SL) and Workarounds (WA).

Self-Limiting (SL)

Self-limiting behavior was used to describe situations in which SLMSs were acting to limit student access to various types of online information and services, rather than limited access being externally imposed by school administrators, school policies, laws, or other outside forces. Self-limiting actions occurred for a variety of reasons, from concerns about safety to epistemological beliefs about what students should and should not be doing in a school environment. In other words, self-limiting actions could be conceived of in either a productive sense (e.g., limiting access to scaffold student learning by introducing resources incrementally) or in a negative sense (e.g., limiting access in a censorial way).

The productive expression within this subcategory was seen in posts that described librarian-directed (and sometimes teacher-directed) limitation of resources as a way to scaffold learning. Many of these posts discussed starting students with preselected sites or directories of vetted sites, such as the Librarians' Internet Index (www.lii.org). Some respondents suggested then moving students into more open-ended and self-directed searching and evaluation tasks. Participants exchanged lists of recommended portals and directories. There was a discussion of "make your own search engine" tools like Google Co-op (www.google.com/coop/cse), in which the search engine searches only a set of websites preselected by a librarian or teacher. While this strategy was seen as being useful for teaching search techniques, some argued that the practice denied students the opportunity to learn to evaluate websites themselves.

This category also included limiting access for safety reasons. There were numerous requests for child-friendly image search sites. Some posters described such sites with the student's point of view in mind ("Students at my school feel safe when they go to this site"). Occasionally these safety concerns were expressed in alarmist terms, possibly borne of ignorance, such as a warning from a participant not to allow students to use a popular social networking site for children because a parent had claimed it was being infiltrated by predators.

Frequently, SL posts were reflective of a strongly held belief that schools and school libraries were environments in which only educational information should be made available online and that the Internet *at school* should only be used *for school work*. Students who attempted to do otherwise were variously described as wasting time, avoiding work, and merely socializing. There was suggestion that such ne'er-do-wells be directed to books and magazines instead (which, though unremarked, were also likely to be noncurricular in content). Other posters opined that they had no objections to nonschool related Internet use as long as groups of students did not collect around computers and cause disruption. These posters felt the emphasis should be on making sure that those who really needed computers for school work had first priority, rather than spending time trying to monitor unenforceable rules. Other participants were more willing to be enforcers (or perhaps did not see a way to avoid it). They had technical queries about how to thwart student use of proxy servers, how to retrieve deleted browser histories, and, in general, how to make sure that students only accessed sanctioned

content. A few of these postings were more distinctly curmudgeonly. One poster made the argument that many Web 2.0 tools were the latest in a long line of technology fads that never lived up to their promise of reforming education. Many LM_NET participants were quick to offer best-practice Web 2.0 examples in refutation of this claim.

A number of participants felt that the open Web was simply no place for students to roam, even in the cause of school research. Some respondents to a general query on teaching seventh grade Internet research skills expressed shock that teachers (let alone the librarian) would want their students to learn how to use search engines—particularly when the library had subscription databases to offer. The implication was that these teachers were exposing their students to an unvetted and potentially dangerous information world. There was even a suggestion that allowing students to decide where they wanted to search was symptomatic of a growing trend in which teachers cede classroom control to students. Other posters suggested requiring the use of preselected sites, and several offered strategies that would encourage the use of the subscription databases.

Subscription databases themselves had a strange role to play in the SL subcategory. Finding them hard to promote with students, many LM_NET participants offered interesting lures that were, in some ways, employed at the expense of teaching Web evaluation skills. Students might be required to fill out Web evaluation forms for sources found using Web search engines, but not for articles found using databases. Other strategies to encourage the use of databases included allowing free printing from databases (but not free printing from the open Web), making assertions to students that any source found on a database would not be questioned for its credibility, and requiring that database resources be exhausted before a supervised Google search could be conducted. It was reported that students would turn to the databases out of desperation to find unblocked content, an unanticipated consequence of filtering and a kind of strings-attached inducement to use databases. Though well intended, such efforts to direct students to high-quality databases may have unfortunate side effects. First, students might easily infer that databases are sources of last resort, or sources that only teachers and librarians find valuable. Second, and ultimately more serious, the lack of scrutiny of database content implies that *all* information found in magazines, journals, newspapers, and other "traditional" sources is credible and of equal merit.

Workarounds

Like students, SLMSs developed creative workaround solutions to cope with LA situations:

- Asking LM_NET participants to e-mail or fax information needed for a lesson from a website that was blocked at a requestor's school
- Getting around a filter that blocked printing from newspaper websites by copying and pasting the text into a word processor (a strategy students were prohibited from employing)

- Exchanging technical instructions for downloading and saving videos from YouTube, which was blocked in many schools
- Exchanging information about Web 2.0 services hosted by education sites and organizations (e.g., Edublogs and Myteacherpages.com), in a sense "legitimizing" the workaround process.

During a May resurrection of the LM_NET-as-a-blog topic, several workarounds for reading blocked blogs were suggested, such as accessing them through an RSS feed reader such as Bloglines, asking others to send posts as e-mail attachments, reading the blog at home, and purchasing a domain name that did not have the word "blog" in it. As mentioned earlier, some posters undermined filters by purposely misspelling or creatively punctuating words that would otherwise have been blocked, such as "b_log."

In some cases, the workaround was simply to ignore the rules when feasible. This tactic was described in a thread on the use of instant messaging applications, which can be very difficult to block by technical means. In those cases, participants continued to use instant messaging, but did so discreetly. Sometimes librarians found it expedient to make similar exceptions for students. For example, in cases of prohibitions on the use of portable flash drives, a participant might report allowing students to send themselves documents by e-mail despite policies disallowing student e-mail use at school. Some respondents described turning a blind eye to the use of MP3 players in schools that prohibited them. For some, this was a principled form of careful rebellion. For others, it was a way to maintain personal sanity in an environment that increasingly required educators to monitor and correct all manner of student behavior.

In schools where the authority to update websites was limited to specific, non-media-center personnel, librarians sometimes resolved those situations by establishing Web services in alternative locations—either with or without the cooperation or collaboration of technology personnel. In the best of those cases, this strategy relieved technology staff members from work overload and was done with their blessing. IT staff were quite willing to link to the parallel site that someone else (the SLMS) worked to maintain. Some posters made personal commitments to ensure their ability to manage Web content, such as purchasing a domain name and paying an Internet service provider with personal funds.

Conclusion

If there was an unexpected finding in this study, it was the relative lack of discussion on LM_NET during this six-month period about today's high-stakes testing environment. Yet this topic is the focus of much concern in the discourse of educators and receives significant exposure in the mainstream media. In a column for *School Library Journal*, high school principal Chris Lehmann wrote, "While some argue that the digital age has made the librarian obsolete, I believe that librarians face a far more insidious threat—the growing reliance on high-stakes testing" (2007, 20). From Lehmann's perspective, the Internet is not what strikes a death knell for the profession, "but rather an assessment system that prioritizes multiple-choice answers that identify a single 'correct' response,

rather than contemplation, research, thoughtfulness, multiple perspectives—all vital elements that a library can bring to a school" (Ibid.). SLMSs who posted to LM_NET during the study period either did not regard the prevailing assessment system as one that posed a serious threat to their mission or did not feel they could take it on (possibly by themselves) in any meaningful way.

Although it was no surprise to find that LM_NET participants frequently discussed LA issues, the passive tone of some of those discussions resembled the tone of the HST conversations. When posters discussed matters over which they had little authority or control, such as filtering software, many seemed to exhibit a sense of resignation. Like high-stakes testing, filters were regarded as a fact of life, and participants did not often question the status quo. Instead, most focused on trying to figure out how to live with them, even when radical change might not actually be called for. For example, while filters are required in schools that use E-rate funding, specific filter settings can generally be adjusted and refined, allowing teachers and librarians to access sites such as educational blogs and wikis. It was clear from a number of postings, however, that in many schools existing unblocking procedures were so cumbersome that they violated the intent of the Children's Internet Protection Act, which specifies prompt unblocking of appropriate (and constitutionally protected) material.

The same tone of resignation (albeit peppered with frustration and even sarcasm) was evident in many of the postings from the LA self-limiting subcategory. Some in the field are starting to express concern about this phenomenon. Mary Ann Bell (2007) conducted two informal surveys of LM_NET participants and found that school districts were engaging in self-censorship by "filtering the filters." Districts do this by implementing overly broad interpretations of acceptable use policies, allowing students to visit only preapproved websites and limiting Internet use to "instructional purposes." She describes the case of a school blocking all sites related to automobiles to discourage "frivolous use" and observes, "Libraries don't deny students access to books about sports, pets, and hobbies, so why should we limit access to similar online resources?" (41). Bell points out that although many in the field are aware of this self-censorship, few seem willing to talk about it. She charges librarians to actively reclaim their professional responsibility for managing information access (rather than ceding it to instructional technology staff) and to protect their students' rights to information.

In contrast to the tone of the HST and LA categories, LM_NET participants exhibited a great deal of passion when discussing ECNC topics. Rather than resigned, the tone of those conversations might be angry, defensive, hurt, or emboldened. Many felt forgotten or misunderstood despite good-faith attempts to demonstrate their value and role in the educational mission of their schools. Yet, as Lehmann says in his essay on high-stakes testing, the role of the SLMS is more important than ever to "help students make sense of the blizzard of information at their fingertips" and "to remind us each and every day that our students can learn more—and do more—than a high-stakes test could ever measure" (2007, 20). Another vacuum that SLMSs are well suited to fill is that of the school leader in emerging information and communication technologies. Many LM_NET posters bemoaned having to work with school administrators who lacked a basic understanding

of Web 2.0 applications, both in terms of what those applications were as well as their potential for enhancing learning. One poster reported that when she mentioned the word "blog," she was sure her principal imagined something like MySpace. This is where the confident intercession of the SLMS can spell the difference between a school response based on fear and ignorance and a school response based on professional expertise. The angst that SLMSs feel is genuine, but can be considerably reduced as individuals assert their role in managing the difficult issues brought about by access to digital media.

In general, schools (and their library media centers) are operating on models of practice that are based on earlier paradigms. Students have always browsed library shelves, now they also want to browse the Web. While shelf-browsing continues to be encouraged in school libraries, "purposeless" Web browsing generally is not. Today's students use a suite of online tools that have changed the way they socialize and learn. At the same time, use of these tools is typically discouraged in the school library, both in the name of safety and in the belief that school is not the place for "noneducational" activity. Bell (2007) attributes such self-censorship to fear and the need to have more student oversight. Yet we have learned that teenagers are more careful online and less susceptible to predators than previously assumed (Lenhart and Madden 2007; NSBA 2007; Hinduja and Patchin 2008; Wolak et al. 2008). As to the prohibition against noneducational uses of the Internet, how can one then justify the presence of recreational print material in the library?

We also know that today's students have poor online searching and evaluation skills (ETS 2006) and that the ability to search well improves the ability to evaluate online information (Heine 2006). Students who only are allowed to access preselected websites are therefore being denied the opportunity to learn effective evaluation skills as well as search skills. Yet outside school, most students experience unfettered as well as unguided access to the Internet. Mark van't Hooft argues that limiting access to the Internet and its tools is more likely "to aggravate rather than resolve complex problems arising from the new conditions of the digital era" (2007). Bell agrees, noting that "filters and self-censorship won't keep students safe from online smut. Teaching them safe and smart searching techniques will" (2007, 42).

Recommendations

Although a study like this one cannot offer a set of concrete prescriptions, the results do suggest a number of points for consideration:

- Retooling is essential. Success in teaching evaluation of online information is inextricably tied to the SLMS's comfort level with new technologies and literacies and an understanding of today's information landscape in its totality. SLMSs must stay abreast of new developments, be able to conceptualize technology-based pedagogical applications that truly enhance learning, and be ready to assume a technology leadership role in their schools.
- SLMSs must think strategically as they work to develop a core role for IL in their schools. In comparison, retooling is probably the easier task. Strategic planning,

on the other hand, requires careful cultivation of the position of the library media center program within the school culture. Practitioners need to determine which players in the school sphere—administrators, other teachers, support staff, parents, or school board members—can be instrumental in helping ensure that IL principles are valued and can thrive. What partnerships and relationships are essential? Part of this effort requires strategic thinking about today's multiplicity of standards and learning expectations and an ability to create collaborative goals that can satisfy those demands across disciplines.

- Finally, it is important to keep core principles of librarianship at the forefront of all we do. Every activity should be examined in light of those fundamental precepts. SLMSs need to ask themselves how they spend their time. What portion of the day is devoted to monitoring and housekeeping activities in comparison to the portion spent coaching and teaching? At the same time, it is also important to recognize that not all battles are winnable. With some issues under our control and others not, consider the teacher-librarian's "prime directives." The best we can do is to keep circling back to those courses of action that most closely match our credo and fulfill our professional goals.

In one of the many lively LM_NET discussions of whether or not to allow student use of Wikipedia, several posters opined that the wrong question was being asked. They suggested that the better question to pose would be "how do we teach students to evaluate information, regardless of the source?" A similar sentiment emerged from the discussion on promoting databases to students. Rather than presenting databases as singular sources of credible information, posters felt it was critical to remind students that information of all types comes packaged with the inherent bias of human-created intellectual content. If students are encouraged (or even required) to make use of multiple resources and taught to compare, contrast, and corroborate what they find, they are much more likely to build the skills they need to evaluate the authority of any information they encounter, regardless of its format or origin.

At day's end, one of the core responsibilities of the SLMS remains teaching information retrieval and evaluation. It is time to take a closer look at the unique challenges that plague teaching the evaluation of information in today's highly mediated environment.

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Table 1

Category	Responses
General queries (GQ)	60
High-stakes testing (HST)	14
Everyone in charge, no one in charge (ECNC)	205
Standards (S)	26
Defining and defending role (DR)	179
Limited access (LA)	189
Self-limiting (SL)	39
Workarounds (WA)	15
Other LA (OLA)	135

Appendix A. List of Topics Included in Analysis

- Access to social networking sites
- Advocacy for teaching website evaluation (by the SLMS)
- Collaboration with classroom teachers
- Credibility of Web resources as compared to traditional print resources
- Evidence-based practice, accountability
- Fixed scheduling vs. flexible scheduling (in terms of IL role)
- IL standards and “core” curricula
- Internet filtering practices and policies
- Literacy movements (types, scope, and competition among)
- Locus of responsibility for teaching website evaluation and IL skills
- Management of technology (issues related to SLMSs’ autonomy and authority)
- Management of technology (issues related to SLMSs’ job responsibilities)
- SLMSs as teachers of technology/reading/information literacy

- SLMSs' changing roles in today's schooling environment
- NCLB
- Perceptions of SLMSs' teaching role
- Preselected collections of websites (e.g., Internet Public Library)
- Preselecting websites (by SLMSs or teachers)
- Search engines for children
- Strategies for controlling or managing student access to the Internet
- Standardized (i.e., high-stakes) testing
- Student access to the Internet for noncurricular use
- Student access to and use of portable devices
- Student achievement (in the context of teaching information literacy)
- Teaching evaluation of online translation services
- Teaching Internet safety in the context of learning how to detect credible information
- Teaching the use of online databases (in the context of their role as Web resources)
- Teaching website evaluation (including concepts related to copyright and intellectual property)
- Technology learning standards and "core" curricula (local, state, professional, etc.)
- Use of Web 2.0 tools (either directly related to teaching website evaluation or related to their prohibition)
- Use of webquests as IL activities that promote higher-order thinking
- Website evaluation curriculum and resources
- Wikipedia (both as a website to evaluate and as an object of prohibition)

Appendix B. List of Topics Not Included in Analysis

- Books (recommendations, resources, collection development)
- Censorship (books and magazines—distinct from website filtering)
- Citation styles
- Computer security in an administrative context
- Computer monitoring software in a management context
- Copyright and other legal topics (i.e., in an administrative rather than a teaching context)
- Cyberbullying (except as related to blocking resources that might be used in teaching evaluation)
- Discussion list announcements and reminders
- Equipment and automation systems
- General IL topics, unless they relate to teaching website evaluation
- Information about giveaways and exchanges
- Internet safety instruction of the "stranger danger" variety
- Job announcements and career advice

- Lesson plans not dealing with online information evaluation
- Off-topic postings (including those labeled “OT” as well as those obviously off topic)
- Publisher resources
- Reading programs (Accelerated Reader, etc.)
- Requests for e-mail pen pals
- Resources (“I need good resources for student research on topic X”)
- Process/administrative/procedural discussions (scheduling, maintenance, inventory, etc.)
- Professional development
- Pro-technology vs. anti-technology debates
- Salary and related job issues
- Staffing and budget levels
- Teaching software packages to teachers and/or students (including some Internet applications, such as RSS or Second Life)
- Technical technology questions (software, hardware, and online service tech tips)