A CASE STUDY OF LEGITIMATE LITERACIES:
TEENS’ “SMALL WORLD” AND THE SCHOOL LIBRARY

BY

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DISSERTATION

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ABSTRACT

This dissertation is a dual-site ethnographic case study of the lived information literacy experiences of students in their junior year of high school relative to their school library and librarians. What began as an investigation of an apparent gap in understanding between the views of teens and school librarians regarding “information literacy” ended up being a discovery of young adult information cultures—or “small worlds,” as described by Elfreda Chatman (1999).

Information literacy, as it is defined within the school environment, often neglects the information experience of teens outside of the school. Therefore, emphasis in schools is placed on everyday life information seeking (“ELIS”; Savolainen, 1995) of teens operating within the dominant discourse of information literacy as defined by the school librarians and within the epistemology of schooling, where there are explicit limits on legitimate uses, definitions, technologies, and even inquiries of and about “information.”

The irony, however, is that while the core objectives of teaching information literacy include critical thinking and evaluation, the discourse of information literacy relates little to the empowered decision-making of teens in their everyday information behaviors at home, work, and in schoolwork tasks outside of the school library. This thesis delineates the small worlds of teens relative to their librarians, with an emphasis on the teen experience. However, the evidence suggests that both student and librarian are limited within the context of the school library by dominant information literacy discourses, and that both communities may benefit from including their own lived information behaviors within the schooling environment and its attendant tasks. Essentially, the study takes critical-theory (Foucault, 1980) and Pragmatic,
inquiry-based (Dewey, 1938) approaches to information literacy as defined within formal learning environments and calls for a practical, ELIS-based approach in our school libraries. The alternative embraced by a continued defense of information literacy as currently defined is professional irrelevance.

Using discourse analysis (Gee, 1999) as a methodological lens makes explicit the knowledge domains of high school students and school librarians. Findings include: (1) information behaviors of high school students and school librarians appear to be concordant in informal information seeking, mirroring one another’s knowledge domains and consistent with ELIS theories; (2) however, in formal information tasks such as those for a school assignment, school librarians’ understandings—or at least their practices—regarding what makes students information “literate” are restrictive, focusing on issues of legitimacy rather than effectiveness; (3) “small world” knowledge domains of high school students are neglected in school information tasks, and this has implications for student access, agency, and identity; and (4) there appears to be an opportunity to draw on the lived information behaviors of both communities to make the term “information literate” more inclusive, flexible, and adaptable; ultimately having pedagogical implications.
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I. INTRODUCTION

“But the Emperor has nothing at all on!” said a little child.

“Listen to the voice of innocence!” exclaimed the father...

“But he has nothing at all on!” at last cried out all the people.

The Emperor was vexed, for he knew that the people were right; but he thought the procession must go on now!

And the lords of the bedchamber took greater pains than ever to appear holding up a train, although, in reality, there was no train to hold.

--The Emperor’s New Clothes, Hans Christian Andersen

A. Statement of the Research Problem

My research asks: What does "information literacy" (IL) really mean to high school students in the context of their own information behavior relative to the school library? What do the students actually do in their own environments of school, work, and home and how do they describe what they do? Ultimately, does this have anything at all do with the school library and information literacy? In an ever-inverted info-verse—where previous consumers become producers, students become teachers, teachers become learners, and novices become experts—school librarians risk the real consequence of becoming irrelevant by not critically questioning the underlying assumptions of what constitutes teen information literacy.

Mainstream and trade media report such (typically negative and alarmist) results: a November 2006 study released by the Educational Testing Service—using one of the early initial assessment tools—indicated that only 13% of the 800 high school and 3,000 college students tested for ICTL were "information literate" (Library Hotline, 2006). The numbers are not much
improved when we examine how many institutions of higher education include information literacy as part of their mission to Millennials (National Center for Educational Statistics, 2012).

What do measurements such as these mean in real-world information behavior of young adults? Is there, indeed, a disjunction between student information behavior and the school library? If so, is information literacy as it is practiced within school libraries doomed to fail—even in the most privileged of school communities? By studying the information phenomena of the teens as they are co-located with the tacit—and dominant—information literacy discourses adopted by the school librarians (and by extension, the institutions in which the librarians operate), I acknowledge I am attempting to make explicit the invisible. However, I am suggesting that by closely examining the information behavior of teens in context—and my emphasis is on the everyday life information seeking (ELIS) of a teen in his own home, which offered a rare, rich portrait of what John Dewey called “end in view” and is bound by the experience of the learner—I suggest that teens are quite information literate. In fact, by adopting what one may call a hyper-local\textsuperscript{1} lens, I seek to learn if the gap between teens’ and school librarians’ perceptions of their information literacy behaviors is narrower than it may initially appear. I suggest that the information behaviors of the teens relative to the school library constitutes what Elfreda Chatman defined as a “small world,” within a Life in the Round

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\textsuperscript{1} “Hyper-local” is a term that describes social-entrepreneurship in our ubiquitously wired world. The term is more recently being used in scholarship, typically in relationship to localized, user-generated, and often advocacy-based information practices by citizens. It has particular utility when studying small-scale social network information behavior. I use the term specifically to invoke the idea of the political implications information use and creation have that directly relate to power and knowledge. By taking a hyper-local view, I am positioning myself as research-practitioner (if not a “citizen advocate”) examining at the micro-level the relationship between teens’ information lives. Theorists that have been invoked when discussing hyper-local information cultures include Jurgen Habermas.
where control and containment, appropriate and aberrant, are defined by the social norms of insiders and outsiders. Divergences from a common language reflect the specific cultural roles school librarians and students adopt relative to school information tasks. Key, however, is that divergences between the students and school librarians rest upon ideas of what constitutes “legitimate” information literacies. The implications of which invite a critical examination of dominant information literacy discourses themselves; particularly in light of power, authority, identity, and knowledge.

That said, there are those who may arrive at another line of inquiry: “Isn’t this evidence of the students just not getting it, and the need for renewed efforts? Could this mean we need more time, more inclusion, more databases, more integrated curriculum, more....” I suggest even with more (time, budget, educator training, inclusion, respect, staff, etc.) we as librarians make an assumption of our own “rightness”; rarely questioning “information literacy” epistemology. There is a growing number of voices in the field who do question how librarians should define it or suggest there is somehow a generational (and technological) lag between teens and librarians (c.f. Bush in “Information Transliteracy” by R. Shroeder, 2012). However, I suggest we need to ask, in the face of our own experiences in the schools in which we work, “What if it’s not the way I’m teaching, or my school’s circumstances? What if it’s ‘information literacy’ as we define it?” Librarians are positioned as negotiators and facilitators; trained to understand how to efficiently use potential sources. Perhaps more than traditional disciplines, 

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2 Kuiper and Volman place the question of power, knowledge, authority, and uses of the web in K-12 education in the theoretical framework of educational philosophy where critical pedagogy is often employed. They particularly call on socio-constructivist approaches that draw on real-world practices of students wrestling with the challenges of meaning-making in web searches (Kuiper, E. & Volman, M., 2008, 241-266).
library and information science requires a permeable relationship between self and other, student and teacher; an openness to ways in which we arrive at solutions—or perhaps more accurately, discover essential questions. A core goal of information literacy within schooling is to foster independent and critical thinking beyond the walls of the classroom; therefore, a disjunction between dominant information literacy discourses and the real information world in which students operate is worth probing for potential explanations as to how this core goal may—or may not be—met. Realistic questions to explore are: “Is information literacy not unidirectional, but transactional; and what does that look like in the information world of the teen student relative to the school library?” Ultimately, we as librarians may need to ask what “information literacy” means to us, why, and who benefits.

Mine is an exploratory dissertation investigating the phenomena of information literacy behavior of teens. I chose to conduct an instrumental case study (Stake, 2000) which allows the researcher to use a case, which is made up of closely related situations and contexts to probe a larger social issue or issues (Stake, 2006). The instrumental case study investigates the information literacy experiences of junior year high school students in the context of the school library media center, using applied ethnography (Chambers, 2000; Emerson et. al. 1995;

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3 I considered what constitutes “a case” versus “multiple-case study” as discussed thoughtfully and in careful detail by Stake (2006). One could make the argument I could have applied multiple-case study analysis to my question(s). However, when I examined the focus of my inquiry on teen information literacy phenomena across two closely situated sites that had implications for larger social questions regarding young adults’ knowledge constructions and identity using information communication technologies, I decided that this question could be best addressed as one case, not two. The two sites, however, allowed me to examine rich contexts in which the teens engage.

4 One current example of what I would call applied ethnography is the ongoing project “Ethnographic Research in Illinois Academic Libraries: [ERIAL]. The project, conducted by anthropologists in coordination with librarians, exemplifies how ethnography can afford insights into the information worlds of undergraduates relative to their university libraries (http://www.erialproject.org/).
Williamson, 2006) and discourse analysis to make explicit the tacit knowledge domains (Gee, 1996, 2006; Talja, 1999; Budd, 2006) of the two communities. My research offers a lens on the relationship between information behavior (Chatman, 1999) and information literacy (Limberg & Sundin, 2006) in the context of schooling (Lankshear & Knobel, 2003; Osberg & Biesta, 2003; Osberg et al., 2008) By using Chatman’s Life in the Round and small world theory, a researcher can see the information behavior of a community as being shaped by the dominant, routine standards that either legitimize or marginalize behaviors; can better see the tacit rules that shape information behavior within a closed environment; and identify what are called “small worlds” that form as communities build knowledge and make meaning under the scrutiny of living a Life in the Round. In my research, I apply Chatman to the information worlds of teens operating within a school environment, and follow those behaviors beyond their walls for a contextualized view. Given that most school work is done outside of school and in the home, it seemed reasonable to examine the extension of a teen’s small world into the home environment. Using Everyday Life Information Seeking (ELIS) allows a researcher to examine that extension beyond the school library, and I focus on how the teen student constructs meaning with information in everyday life in work, hobbies, solving homework, and in social life.

My research is an attempt to contribute to the conversation about how we can study young adults’ information universes as organically as possible. Gaining full access to the info-world of teens is an ongoing challenge in library and information science (LIS) research (Carey, et al., 2001). My study emphasizes the lived information universe of one teen in his junior year.
in high school, placing how a student solves school information problems within the context of his daily information behavior.

To study this problem I:

- Employed ethnographic instrumental case study methodology
- Employed discourse analysis (Gee, 1996; 1999) to identify patterns of knowledges that define teen students’ “information literacy discourses”
- Employed Savolainen’s (1995, 2005) Every Life Information Seeking (ELIS) and Elfreda Chatman’s (1999) Life in the Round to describe the small world in which teens negotiated as made evident through discourse analytics
- Suggest we take a critical theory (Foucault, 1980) position to information literacy and ask ourselves as school librarians and LIS educators what we believe “information literacy” to be and why; and allow the possibility that it needs scrutiny if evidence presents itself that our definition does not fit the community in which we work.

B. Background: Discovery of a Grand Disconnect

Every research question has a story. Mine began with a sickening knot in my stomach one January morning in a school district’s administrative office. As I handed the three school librarians and a district-wide technology administrator my summary report of research my

5 I want to make clear the distinction between Chatman’s theory of information behavior and the tightly constructed communities or “worlds” defined by information use within restrictive and controlled environments (such as prisons, or in this case, schools) and “small world network “approaches that closely analyze linkages and nodes to make more explicit issues of accessibility and navigability in user behavior research.
university had conducted of students’ use of information technologies and school library resources I anticipated their responses. The thick packets with bar graphs and pivot tables revealed unexpected and unwelcomed news: in a survey (Appendix A) of about 800\(^6\) of their middle and high school students, less than half felt confident finding information—electronic or otherwise—in or from their school libraries; less than a quarter could describe the difference between the Internet or a “database;” about that many relied on sources from the school library to do research on a regular (once a month) basis; and fewer than 2% wanted to be librarians or thought librarians were information technologically competent (Comstock, et al. 2006). When information questions arose, turning to their school libraries often was an action of last resort. So where were the middle and high schoolers turning? Despite the librarians’ best efforts and district-wide information literacy curriculum, search engines were far and away the number-one source (Yahoo and Google), and over 95% stated they were “very confident” finding what they needed. The role of the library, its resources, the information literacy standards threaded in the collaboratively constructed curriculum, and even the value of the librarians’ professional experience all appeared to be called into question by the teen survey results.

That winter morning as the librarians turned the pages of my summary report in—what seemed to me—stunned silence, a question formed in my mind *How could this be?*

\(^6\) Total numbers of both paper and online surveys given across the state were 1014 children ages 12-17. Confirmed on the survey itself (those students who wrote their school or home location) in the district were 593. However, number of consents signed and students having taken the survey in school with their classes places the number of students at just short of 800 (accounting for potential absences that day). While a state-wide survey, approximately 800 participants were from this district because of its concentrated effort to allow school-time for the survey to be taken.
The gestation of my question began in a University of Illinois, Urbana-Champaign (UIUC) Graduate School of Library and Information Science (GSLIS) research project titled "Multiliteracies, School Libraries, and Cybraries: Comparative Case Studies of Australia and the United States," (hereafter referred to as “Cybraries”, Bruce and Kapitzke, 2004) for which I was a research assistant under Dr. Cushla Kapitzke of the University of Queensland, AU and Dr. Bertram (Chip) Bruce of UIUC-GSLIS. In this state-wide, open-call7 study, we surveyed over 1,000 middle and high school students in Illinois; from these, we selected participating school library sites to visit, and conducted interviews with school librarians. Initially funded by the Australian Research Council as a comparison study between Queensland—a technologically rich state—and a similarly robust state in the United States, the Illinois side of the study became a portrait of information communication technologies (ICTs) used by Illinois students. In Illinois, we used an action research model8 to create a survey of middle and high school students on their use of their school libraries and technologies.9 From this survey data, the very same I

7 By “open call”, according to the Cybraries study protocol, meant no specific school was recruited. Participants were self-selected. A request for participants was posted with the Illinois School Library Media Association, and using the professional networks of the University of Illinois’ Graduate School of Library and Information Science (bulletin board; email listserv to alum; professional practicum coordinator at the University; and announcements at professional conferences attended by school librarians in Illinois during the time of the open call: Children’s Literature Conference (Northern Illinois University) and Illinois Computing Educators (ICE).

8 “Action research” is defined here best by the attempt “…to engage the full range of relevant stakeholders, widening the circle of reflection and change.” (Bishop, et al. (2003) “Participatory Action Research and Digital Libraries” in Digital Library Use: Social practice in design and evaluation.) Action research allows a community to define for itself the research to be undertaken, grounded in real-world concerns. In this case, it had a limited application: one school district trying to discover students’ information technology behaviors. Yet, key to the Cybraries study was that it be as participatory as possible, that stakeholders be agents within their own school and school libraries. Therefore, district administrators, technology coordinators, elementary, middle and high school librarians, library assistants and I met to collaboratively craft survey questions that would support the district’s own inquiry into their students’ uses of technologies at home, in classrooms, and in the school libraries. Ideally, we would have included students from across the district to inform the Cybraries survey as well.

9 For a more detailed description, please see the “Methodology” section.
presented to the librarians that day in January, emerged questions regarding students’ understanding of information literacy in general, and an ongoing relationship with one of the participating high school sites developed as we explored answers to these questions.

Through my analysis of the data from this school district, I became aware of a growing inconsistency: despite the school having what would be considered a model information literacy curriculum from middle school onward, students appeared to “lack” traditional information literacy skills. These students were privy to an Information Power\textsuperscript{10} -ed curriculum in a school district with close to one-to-one (or “ubiquitous”) computing; with middle school schedules (“flexible scheduling”\textsuperscript{11}) to accommodate library research and instruction; with MLS-holding library staffs who held positions of leadership in directing district-wide technology decisions; and with collaborative faculty and project-based learning teams. The librarians had advocated for and earned a position within the schools’ department team meetings, sitting right alongside language arts, history, and science department heads at meetings with administrators. The library was considered a “department”; a rarity in most schools. The district website was created and maintained by one of the district librarians.\textsuperscript{12} One librarian in the

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\textsuperscript{10} AASL/AECT. (1998) Information Power: Building partnerships for Learning. Chicago: American Library Association was, and remains, a key publication for professional development and education of school library media specialists. In it are information literacy standards that guide and support teacher librarians in collaboration and advocacy in their school communities. They provide the basis for the updated AASL Standards for the 21st Century Learner (2009).

\textsuperscript{11} “Flexible scheduling” is one indicator of a school district’s valuing the role of the school library media center. Its presence could be viewed as evidence of some power and authority of the librarians to successfully advocate for inclusion in the curriculum. The American Association of School Librarians issued a formal “Position Statement on Flexible Scheduling” in 1991.

\textsuperscript{12} Gaining access to the school network through technology administrators was no small feat; once again illustrating not only her technological skills, but her political prowess as well.
\end{flushleft}
team is deeply involved in civic engagement, sponsoring National Issue Forums. Another worked with school libraries in South Africa, and was an invited speaker and consultant for school libraries there. Furthermore, these librarians were—and continue to be—leaders in the state, being founding members of the state school library association when it split from the more general state library association; and past board members and presidents of the organization.

Not only did these students have access to respected librarian leaders. They were also fortunate enough to live in a Midwestern city repeatedly ranked by *Money Magazine* as one of the best places in the nation to raise a family: low crime, green space, park districts, economic growth, affordable housing, cultural offerings, and city-wide family programs and social services all contribute to make this city livable. Furthermore, its public library earned the top spot for several years in a row in Hennen’s American Public Library Rating (HAPLR). This is a city that has two high schools that rank in the top 15 public schools in the state, while actually spending only a bit above the state average per pupil. The city itself is in the heart of what is designated a research and development corridor, with anchor telecommunications technology employers and two major federal scientific research laboratory campuses. Furthermore, it is home to a regional educational technology laboratory that collaborates closely with area-wide schools. Universities routinely select this district as an ideal environment for their students to earn teaching practicum credit, and often compete for available spots. In the “Cybraries” surveys, every student reported having Internet at home and at least one computer. Every student

13 In order for the school district to remain anonymous, I am not citing the magazine issue date.
reported using their public library. Every student reported having books in the home and buying their own magazines at least once a month. By any measure, this is a literate community that cares about education and its children. In fact, the city is considered so ideal, it is often scorned by outsiders as “Disneyland.”

How, then, the librarians wondered, could the students not know how to use the school databases like EBSCO and ProQuest? What about the new AP Photo Archives? What about all those statistics that showed someone is logging in to these from home and at school? What about the librarians’ and teachers’ specific handouts? The information literacy lesson plans? The class visits to the library? The adapted Big6 worksheets? Teacher workshops during inservice days? What is going on here?

According to accepted school librarian professional norms for integrating information literacy, this district—and these librarians in particular—were doing everything “right.” These librarians worked tirelessly to customize their web portals in order to both organize their online resources and support the curriculum; they selected and piloted new information databases in order to evaluate the resource in light of their students’ and teachers’ needs; they provided individualized and group instruction and expert reference support, modeling information literacy with their library’s resources; and they worked closely with willing faculty to build information literacy benchmarks in problem- and project-based assignments. For all of these

14 Both EBSCO and ProQuest are viewed as core databases in the collection management plan in this school district.

15 Big6 is a trademarked information literacy model created by Robert Berkowitz and Mike Eisenberg. The school site uses this model in an adapted form, and it is integrated into worksheets, presentations, curriculum building, and the school library catalog. The Big6, briefly, defines steps in the information literacy process as: 1. Task Definition, 2. Information Seeking Strategies, 3. Location and Access, 4. Use of Information, 5. Synthesis, 6. Evaluation.
reasons, they earned respect from their administrators, who had grown to understand the value of an active school library media center staffed with professionals. I was personally deeply impressed—I would go so far as to say inspired—by the efforts of these librarians to implement information literacy district-wide, and how they were able to raise administrators’ awareness of the value of the school library in building confident, “information literate” students. All of which made the reported data that much more surprising.

That morning, the report could have remained a dead document filed in a squat cabinet in the library office. Certainly, in the minds of the librarians at least, it was not indicating the school library information literacy curriculum impact to the degree anticipated. But after some reflection, the librarians asked: “If it’s happening here, with all of our privileges, what about less-enriched school districts?” As a former youth and school librarian, researcher, and mother of a young adult, I found myself asking a question even more elemental: “Why this disconnect—this gulf—between what the school librarians perceived about the school library’s role in information literacy life and the teens?” That winter day was my discovery of my dissertation question.

C. Anatomy of the Research Problem

In spring of 2004, approximately 800 students within one school district took the Cybraries survey. Of particular note to the district librarians were the responses in the "Technology and You" part of the survey, where students answered questions regarding use of

16 My being able to conduct any research at the school site was a testament to the belief instilled in the administrators by the librarians that the library and information literacy matter.
the school-purchased databases, and what they used to accomplish an information task for homework. Essentially, the students reported feeling most confident using their preferred search engines, Google and Yahoo, in direct conflict with the lesson plans given by the librarians not to use search engines or rely on the web. The student responses drastically contradicted what the librarians had expected, given their concentrated curriculum. What did the responses mean?17

In both of the most widely adopted information literacy models by schools (specifically, Mike Eisenberg's and Bob Berkowitz's Big6 Skills and the American Association for School Librarians Information Literacy Standards18), there is an assumption of certainty (Tuominen et al., 2005)—of "right" and "wrong"—in the teaching and learning of information literacy. That high school students are, indeed, reporting the web as their first place to go for homework information is no surprise (Lippincott, 2005). That the high school librarians seem to interpret its use as an "information literacy failure" seems to indicate a disjunction between the teens' and the librarians' understandings of what it means to be information literate.

At the same time, on the state, national, and even international levels, there is an aggressive movement toward assessment of information communication technology literacy, (ICTL) and a trend toward measuring effectiveness of school librarian impact by scores on standardized student tests (e.g., Lance et al., 2005; Lance, 2005) or by rubrics assessing

17The trend of the initial survey data highlighted just how contradictory the responses were to the librarians’ perceptions. I do want to point out that I selected my study site because it, above all other schools, indicated increased usage of databases and the library, understanding of copyright, and a greater degree of confidence in the school library and its librarians.

18AASL Information Literacy Standards are explicitly addressed in Information Power (1998).
successful search strategies (e.g., Todd, 2003; IFLA, 2005; Farmer and Henri, 2008). What do measurements such as these mean in real-world information behavior of young adults? Are we really saying that young adults are “information illiterate?” In the context of the assessment and accountability required by the No Child Left Behind Act (NCLB) of the Elementary and Secondary Education Act (ESEA), what if we step back and more closely consider the student-learner's own information behavior (Limberg & Sundin, 2006) and experience (Dewey in Burke et al. 2002; Dewey, 1938). We may, by examining the wholes, find benefit in making an critique of positivist epistemologies both in library and information science (LIS) research and in library practice (Kapitzke, 2006; Whitworth, 2006). The data gathered in the Cybraries study in some ways have become for me an experiment in critiquing this positivist approach. The survey itself posed more questions than answers, inviting the librarians and I to approach the teens more holistically—not solely with surveys and tests (Williamson, 2005). Those engaged in teaching information literacy and shaping policy may want to shift the focus away from asking, "Are our students 'illiterate?' How can we better test them?" and toward: “Are information literacy discourses themselves in need of examination?”

A reasonable question is, “Why should we examine information literacy discourses?” Certainly there is a national call for assessment of ICTL competencies from middle school through college with an emphasis on student achievement (Farmer and Henri, 2008), drawing

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19 Of course, these mirror those in what is also called simply “IT” literacy (c.f., Kazmer, M. M., & Thakkar, U., 2004).

20 Under the current Obama Administration the reauthorization of the ESEA, A Blueprint for Reform”, allows for some flexibility in how and under what timelines standards are met. (http://www2.ed.gov/policy/elsec/leg/blueprint/publication.html#part1).
on reports from the U.S. Labor Department, among others, that the U.S. is falling behind other industrial economies in effective use of information technologies. As Title II, Part D\textsuperscript{21} of the NCLB (which is in part being used to motivate assessment of ICTLs) is enforced by states across the country, a critical examination of just what “information literacy” means to students becomes a thoughtful and necessary step in our understanding (Williams, 2003). Examining information literacy in the context of information behavior is one holistic way (Lantz & Brage, 2006) to benchmark teens’ information literacy. Indeed, as increasingly sophisticated ICTL assessment tools are prolifically created, marketed, and employed\textsuperscript{22} there is a growing need for alternate methods that take into account the cultural conditions of the institutions and communities in which teens (and librarians) negotiate. Culturally sensitive methods of identifying indicators of ICT literacy are necessary to answer our growing need to understand just what it is we are “assessing.”\textsuperscript{23} Indeed, UNESCO (Catts & Lau, 2008) in its proposed framework for measuring information literacy, states that there are weaknesses in our ability to accurately assess ICTLs:

\textsuperscript{21} Known as “Enhancing Education through Technology Act of 2001”

\textsuperscript{22} For example, in a survey of representative assessment tools currently used at the local, state, national, and international levels, at least 90 are currently employed in some form (Farmer, L. [2008], 147-179). Of these, two are used informally at my research site: Illinois Math and Science Academy 21st Century Fluencies online assessment for teachers, librarians, and students (http://21cif.imsa.edu/tutorials/challenge/Q2Q/KeywordChallenge.swf); and The Big6 (http://www.big6.com).

\textsuperscript{23} Of course, we are not alone in the United States in placing such emphasis. UNESCO’s movement on the Alexandria Proclamation (2005) by offering a framework by which nations can identify information literacy indicators exemplifies the growing importance being placed on IL at the international level (Cats, R. & Lau, J., 2008). While the national indicators are broad, the skills assessment closely mirrors those proposed and used here in the United States. The Organization for Economic Cooperation and Development (OECD) Program for International Student Assessment (PISA) has been noted by Cats and Lau as a likely tool for ICTL measurement, modeled after those in reading, scientific literacy, mathematics, and problem solving (see: http://www.pisa.oecd.org/pages/0,3417,en_32252351_32235918_1_1_1_1_1,00.html). Yet, they stress that there are “gaps” in using such a tool for ICTL assessment.
It is important to know how information and technology is (sic) actually used to decide if information can be received. For example computers may be ‘used’ in schools purely for administrative purposes and accountancy. Indicators such as ‘number of computers used for educational purposes’ still do not indicate whether the actual ICT skills needed to function in the information society are being taught.

Skills assessment can be very complex, and expensive. While it is possible to envisage further work in this area it may prove extremely difficult to produce an international profile of ‘usage’ (p. 36).

By better understanding teens’ information literacy discourses in the context of their relationship to school libraries and their librarians—who have chosen to champion information literacy in their schools—we may be necessarily taking a complex view of information literacy. Learners and technologies are embodied; they form and are formed by, literacy practices (Haas, 1996). Information literacy practices, then, are at the crux between learner and tool; are products of them as they also produce shifts in the learner as well as tool. A complex question such as information literacy may benefit from teasing apart the dynamic relationships that are present. Another reason to better understand teen information behavior relative to the school library is the practical matter of cost, benefit, and relevance. As the librarians in the Cybraries study asked after receiving the results, “Do these information literacy things we are doing matter?” In times of budget cuts and downsizing there is a very practical need to question assumptions about a school library’s relevance.

D. School as Lived “In the Round”: Teens’ Small World Defined

I discovered Elfreda Chatman’s theory of Life in the Round to be almost frighteningly fitting (Chatman, 1999). Her description of how information behaviors develop within controlled and often-marginalized environments such as prisons—in an almost secret-yet-
routine world of insiders who are outside of the controlling culture—reflected accurately the students’ descriptions of their being in school. Conditions of containment, (“imprisonment”), of co-culture\textsuperscript{24} information norms that developed among the students (“prisoners”), of conscious public adaptation of “approved” information behavior to suit the needs of the task-at-hand; and the functions these co-culture information behaviors played in defining the identity of the emerging young adult pointed to issues of power, status, fairness, and legitimacy. A consequence (or is it a condition?) of a Life in the Round is that it has a limiting effect on information seeking behavior. This was clearly the case of the teens who described blocked websites, tools they couldn’t use (e.g., mobile technologies), and even questions they couldn’t ask. The shared information behaviors described, observed, and documented by and of the teens made it clear to me that they were operating as prisoners within a prison; their world view shaped by the environment of social control imposed within a school; that their shared location and social roles as students defined what to them was a “small information world” with its own norms. In essence, I see students as members of a community with their own powerful narratives about their ways of life and knowing. These narratives are reinforced by the everyday conditions of the information environments in which the teens navigate, and behaviors adapted and adopted are shaped by shared life experience. School, then, is a Life in the Round in that it is the very public environment where expected “right” behaviors are implicitly understood. The “small world” is the students’ information behaviors that

\textsuperscript{24} I specifically call the information behavior culture of the teens a “co-culture” not “sub-culture,” because their information behaviors are not less-than or even out of their normal experience. One could say that the real “sub-culture” is that of the information literacy discourses used within the school and school library in particular.
strategically and consciously emerge both for public (teacher, librarian) view and insider (teen) status. One area where Chatman’s Life in the Round theory does not necessarily apply is that of “information poverty” that stipulates that the controlling environment is such that information is extremely limited in supporting independent decision-making. Students are information rich. Another issue is that I suspect the school librarians themselves inhabit a “small world” and are as much in a Life in the Round of professional expectation regarding information literacy as the students. Librarians many times expressed feeling trapped by information literacy curriculum and “having to teach databases.” The information small worlds of school librarians warrants deeper investigation, but necessarily rests outside of the scope of the current study.
II. LITERATURE REVIEW

To put information literacy as it is presented in K-12 environments in broader context, I want to offer a brief survey. First, however, I want to address terminology. I explicitly use “information literacy” interchangeably with “information communication technology literacy” (ICTL) in my own writing. I firmly believe that there can be no “information” without its attendant “communication technologies.”25 In the literature of (what I call) “traditional” information literacy, technology is often viewed narrowly as the physical tool (e.g., the database, computer, or network) by which access to the “stuff” of information is made available or the object with which an assignment is created. One’s ability to manipulate the tool constitutes a distinct skill. In my review, I use “information literacy” because this term is most used by the traditional literature. However, as information literacy is included in ICTL, I then use “ICTL.” I admit that even the evolution of the term “information literacy” to “ICTL” indicates a shift in cultural understandings that are not without political connotations.26 To be clear, I view them as one in the same: there can not be information without its attendant tool or technology.

25 I define “technology” broadly to mean any tool or (trans)action that we may use, develop, or take to assist in our solving a perceived problem, accomplishing a task, or creating new understanding. Therefore, an “information communication technology” is any tool that assists in the communication of, access to, or creation of any information. Obviously Pragmatism deeply influences my thinking on this topic.

26 The inclusion of “technology” in IL has been suggested as a conscious decision by librarian leaders to enhance the perceived importance and value of information literacy in relationship to technology in libraries and the schools. The National Education Technology Standards (NETS), created by the International Society for Technology in Education (ISTE), are included in all 50 states’ learning standards. NETS include as a third point, “Research and Information Fluency” that explicitly addresses IL. Librarians in this study note that it is the NETS and ICTLs that are included in discussions regarding curriculum and technology budget expenditures; not IL. One librarian wryly pointed out that IL is included in NETS, not the other way around. This is one example of how technology has been perceived as having more political value than “information” alone.
What is “information literacy”? There are so many definitions, and I hesitate adding yet another. However, I do propose that we do co-create—with our students and any user population—an emergent, dynamic, “working model” that is contextual, community-based, and acknowledges how daily information behavior shapes effective (instrumental) information use. Before I suggest alternatives, however, what is “information literacy” as we as librarians discuss? What may seem to be a simple question, in reality is far from it; particularly when relating it to the nature of power and knowledge. Proposing even a most basic definition proves to be complicated when we consider, for example, what we mean by “information,” or “effective use.” Definitions, of course, are constructed by communities for specific purposes. Bearing this in mind, the following is in no way to imply a linear, single-path progression of an educational movement. Its presentation is based on the historiography of invested educators. Indeed, what follows should be viewed as an object of critique itself: the story of information literacy as it is presented by librarians, K-12 teachers, and academic researchers in library and information science (myself included). “Information literacy” can be both curricular (that which is delivered as instruction) and a set of competencies that are acquired by the learner. The majority of approaches to information literacy can be broken down into: (1) system oriented, such as we may have with bibliographic instruction at the level of the tool and following a prescribed research order; and (2) process oriented, where user experience is considered, and often is seen in more constructivist environments that take into account the learner’s position, such as examining motivation of the learner and usability and design (Limberg & Sundin, 2006). Therefore, “information literacy” is bound by its pedagogy, emphasis on K-16 environments, and its development is placed somewhat artificially in a linear fashion.
The “information literacy” movement\textsuperscript{27} in the United States has been variously described as beginning in the 1960s (Tuominen et al., 2005); 1970s (Farmer and Henri, 2008)\textsuperscript{28}; and 1980s\textsuperscript{29}. But it was in the 1990s we witnessed a wide-spread adoption of information literacy standards, models, and the wedding of learning theory to those standards. In 1990 both the ALA Information Literacy standards from the 1989 report were approved and Michael Eisenberg’s and Bob Berkowitz’s “Big6” skills-approach model (Eisenberg & Berkowitz, 1990) was published and widely accepted, particularly in K-12 schools. In addition, Christine Bruce’s relational six frames of information literacy model placed information literacy within learning theory (Bruce, 1997). In 1998, information and technology literacy standards were published collaboratively by the American Association of School Librarians (AASL) and Association of Educational Communication Technologies (AECT), titled “Information Literacy Standards for Student Learning” and presented as nine standards.\textsuperscript{30} These last particularly were influenced by

\textsuperscript{27} The question was raised by a colleague why I use the word “movement” regarding information literacy. A movement is a collective guiding idea on which action is strategically taken for an intended social effect. “Movement” to me implies a passionate dedication of many to what may be described as a cause in the face of some form of resistance. School librarians, in this as well as in some of my past research, often described their work in terms of having to “battle” forces within their schools to include information literacy in the school culture. I do hear librarians adopting the tone of a campaign or crusade when they discuss IL.

\textsuperscript{28} In 1974 by Paul Zurkowski of the Information Industry Association; and in 1977 with the Association of College and Research Libraries’ creation of the “Bibliographic Instruction Section.”

\textsuperscript{29} The influential research of Carol Kuhlthau on youth and her information search process model that emphasizes student affective experience began with publications in 1985 (Kuhlthau, 1989). Kuhlthau’s work continues to be key in school library research. Also that year, the American Library Association’s Presidential Committee on Information Literacy report was published.

\textsuperscript{30} According to these standards, the “information literate student” : “accesses information effectively and efficiently”; “evaluates information critically and competently”; “uses information accurately and creatively”; is an “independent learner” who “pursues information related to personal interests”; is an “independent learner” who “appreciates literature and other creative expressions of information”; is an “independent learner” who “strives for excellence in information seeking and knowledge”; “contributes to the learning community and society” and “recognizes the importance of
the growth of information technologies, and are cited by the National Education Technology Standards (NETS) that were developed by the International Society for Technology Education (ISTE).

Today, “personal fluencies” (Tuominen, et al. 2005) and assessment (Asselin, Early, & Filipenko, 2006; Farmer and Henri, 2008) dominate the information literacy landscape, especially in the United States; from higher education’s consideration of applying ICTL performance of undergraduates as a basis for institutional accreditation (Chronicle of Higher Education, 2007), to assessing 8th graders. Skills assessment within the climate of accountability in the United States also has standing among school librarians; particularly in light of strong support for evidence-based practice that, according to influential research (Lance, et al., 2005; Todd, 2003; Todd, 2006; Todd & Kuhlthau, 2005), demonstrates school library impact on student achievement as measured by standardized tests.

While assessment is the current cultural context, there exists concurrently—one might say paradoxically—a commitment on the part of school librarians in particular to take a

information to a democratic society”; “practices ethical behavior in regard to information and information technology”; “participates effectively in groups to pursue and generate information,” (AASL/AECT, 1998).

Indeed, of note for this research is the enforcement by the Illinois State Board of Education of Title II, Part D, “Enhancing Technology through Education Act” of NCLB that requires public school districts to demonstrate student ICT literacy by implementing assessment tools for middle-schoolers (by 8th grade). This was requested retroactively in an email to the president of the Illinois School Library Media Association for a discussion. I raise this to underscore the current political climate of the skills-based approach.

Without a doubt, school librarians in this study most often refer to what have come to be short-handed as “The Colorado Studies,” conducted by lead researcher Keith Curry Lance at the Library Research Service demonstrating school library impact on student learning. The first was conducted in Colorado and the most recent was done in New York in 2007-2008 (see: http://www.lrs.org/impact.php#colo). The Illinois School Library Media Association contracted with Lance to conduct the Illinois Study for a release in 2005. I was invited to attend its release to the media. It was at this press event where I was able to discuss with Lance the need for complimentary research on school libraries in the lives of teens.
constructivist position. The skills-based approach de-emphasizes the student-learner’s meaning making (Kuhlthau, 1993; Savolainen, 1999; Todd & Kuhlthau, 2005; Todd, 2006) and considerations of usability and the search process of youth (Marchionini, 1989; Solomon, 1993; Borgman, et al., 1995; Walter, et al. 1996; Hirsch, 1997, 1999; Bilal, 2000; Shenton & Dixon, 2003). Little does it address the potential for participatory design and youth as creative and engaged citizens who transform digital environments as much as they are transformed by them (Druin, 2005; Hsi, et al., 2005; Braun, 2007; Bruce and Bishop, 2008; AASL, 2009).33 A promising approach that attempts to bridge the worlds between current youth information behaviors and school libraries employs radical change theory, although it has yet to be applied and studied in real-world formalized learning environments (Dresang & Koh, 2009). Too often there is heavy emphasis on little more beyond a material outcome (a report, a Power Point, a movie) that demonstrates use of certain, often-prescribed, resources and tools. Hence, the release in October 2007 by the AASL of its “Standards for the 21st Century Learner” that place ICTL in social context and emphasizes the individual student’s knowledge building. These standards are not without their school librarian detractors, however.34

33 For an analysis of participative environments as diverse as music file sharing to traditional political organizing by young adults, see Bennet, L.W. (2008). Civic life online: Learning how digital media engage youth. Cambridge, MA: MIT Press, one in the series on Digital Media and Learning funded by The John D. and Catherine T. MacArthur Foundation.

34 In discussing the new standards with librarians here in Illinois, I heard frustration at implementation. Most school librarians agreed with the ideals stated, but expressed concern that the standards are not concrete enough for assessment purposes; and that politically it is a step “backward” in the ongoing fight to include school library media specialists as “highly qualified” teaching faculty in NCLB reauthorization. Their concerns are echoed on the AASL blog posting from 1/4/2008, “Reflections on AALS’s New Standards for the 21st Century Learner,” http://blogs.ala.org/aasl.php?title=reflections_on_aasl_s_standards_for_the_ The author writes: “...we are still left with the same inconvertible (sic) truths: standards, not belief statements, drive instruction.” There exists ambivalence, particularly as it relates to professional identity and power within the school community. The attachment school librarians have to assessment should not be considered independent of their professional knowledge domains.
“Information literacy” is not value neutral, yet in school library media centers rarely is it engaged critically. There are, however, some scholars who have addressed a need for a critical theory of information literacy at two specific levels: at the macro-social where we examine the epistemological assumptions made in what I call “legitimate literacies;” and at what may be the “micro” level of assessment of ICTL skills. There is a gap in the research literature interrogating dominant ICTL discourses as limiting knowledge production with implications for identity and autonomy regarding youth and school libraries (Kapitzke, 2003; Lankshear and Knoebel, 2003; Kapitzke, 2006; Burbules, 2006). While there have been critiques of ICTL in higher education (Williams, 2003; Doherty, 2005; Whitworth, 2006), there needs to be what Kapitzke calls “a knowledge of critique through a critique of knowledge;” and that “it is time libr@rians become ‘difficult’ to themselves and to others,” (Kapitzke, 2006, 169). What this means is that conventional library research epistemologies of information literacy might benefit from being challenged (Sundin & Johannisson, 2005; Doherty, 2005) if viewed in their privileged position as limiting freedom of thought and knowledge. Of course, educational theory on how dominant discourses can disempower is presented by Paulo Freire, and scholars in new literacies have deftly called upon his thoughts on conscious problem-posing education as a liberating act (Freire, 1970, 2000). Indeed, there are librarian practitioners drawing on Freire who directly note that current information literacy paradigms conflict with librarian ideals of intellectual freedom (Doherty, 2005). However, these discussions are occurring in institutions of higher education here in the United States and at international levels. I suggest we apply critical theory to information literacy discourses used with youth, where the complexity of who controls and defines “knowledge” has potential to disturb traditional hegemonies. We in LIS who study and
work with youth must be willing, in the words of Anthony Bernier, to reconsider what our own research ontologies deem “worthy information behavior,” (Bernier, 2007, xvii) and be willing to question our own adult re-constructions of digital youths’ ways of knowing (Herring, 2008). We need to be willing to hear and delve into why students see school libraries as “mechanisms for control, a source of only socially sanctioned material,” (Todd and Edwards, 2004). As evidenced by my own “positivist experience” with the Cybraries survey described previously, we—I place myself in the role of school librarian and researcher here—must be willing to redefine ICTL holistically and in sociotechnological context in a way that is grounded in lived information behavior and experience (Tuominen, et al. 2005; Lloyd, 2007; Lloyd, 2007); experience that may challenge our very notions of “literacy.” Again, as Bernier writes, “all adolescent literacy acts come embedded in social contexts. All literacy is local,” (Bernier, 2008, xvii-xviii).

Given this, the call for a closer relationship of information behavior research and information literacy conceptions is logical (Tuominen, et al, 2005; Limberg & Sundin, 2006). Information behavior studies that examine information discourses and practices in workplace settings are particularly relevant to the “local” information literacy understandings of high school students and school librarians. In the shared “workplace” of school and the library, we see “socially shaped, shared understandings” (Talja & McKenzie, 2007) of information literacy emerge between teens and school librarians: two co-located worlds ruled by sometimes divergent—sometimes not—discourses, activities of practice, and experience. These discourses

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35 I consciously use the term “information behavior” as noted by Fisher, Durrance, and Hinton, and echoed by Savolainen “...‘because it captures a broader range of information related phenomena,’” (Savolainen, 2007).
define (and are defined by) position and power relationships. Legitimate knowledges of both “communities of practice” (Johannisson & Sundin, 2007; Wenger, 1999) create small information worlds (Pendleton & Chatman, 1998); worlds that exist within the environment of formal schooling (Osberg & Biesta, 2003) that I suggest constitute a Life in the Round as defined by Elfreda Chatman (Chatman, 1996; 1999). In this world, information behaviors are defined by insiders and outsiders, access and restriction, legitimacy and illegitimacy. Tacit knowledges are shared and shaped by lived experience, and define the local communities (in the case of my research, students relative to their school librarians). These roles closely correspond to those found in work places. The contexts—be they in our places of work, within leisure and hobbies, or in online virtual worlds—define and are defined by our information worlds. So, is the teen community’s information behavior all that different from those in these other communities? I believe the teen community is unique because it is a period of emergence: a time of tension between being a child and adult, dependent and independent, exemption and social responsibility. I ultimately chose to distinguish the teens relative to their self-described identities. The teens in this study, when describing the “have tos” and “gottas” in their roles as students, seemed to me to be defined by their “work roles” and needing to operate within a closed information small world that they perceived (correctly) as a controlling power.

Teens’ roles as “students” mirrors, for example, those of the firefighter (Lloyd, 2007), the electrical worker (Veinot, 2007), or the nurse (Johannisson & Sundin, 2007): their information practices and behaviors are inextricable from their roles’ contexts. For teens, the identity of “student” shapes their social, home, and work lives. They are “student workers” or “student volunteers.” They are “students” first in their own identification. “What are you?
What do you do?” was answered with a scoffing laugh, “A student!”\textsuperscript{36} A key difference, however, is that the firefighter or nurse operates typically within a community of practice, not a Life in the Round where power determines information behaviors.

ELIS (Savolainen, 1995; 2005) research suggests that our information behaviors in informal environments—in our homes, hobbies, civic lives—are driven by practical needs, and that our needs are essentially our own desire to have mastery over our own lives (Savolainen, 1995; in Fisher, et al., 2005, 143-152; 2008). At its core, the ELIS model gives us the holistic framework within which to identify the social and technological experiences of the whole person acting as an agent in his/her information environment. ELIS, therefore, suggests that we can not separate the individual from his/her experiences in one role from the next, one experience from the next. Kirsty Williamson’s ecological model builds on this, essentially stating that the social environment and very nature of conscious (and unconscious) information experiences—of life—influences information acquisition and use; a deeply social constructivist approach (Williamson, 2005; 2006).

Recent youth information behavior research draws heavily on ELIS models. Yet, as Karen Fisher writes (2007), there is still an over-emphasis of youth LIS research on information use for school tasks that can be viewed as prescriptive in its intent (e.g., Kuhlthau, 1989, 2005; LaTrobe and Havener, 1997; Fidel et al, 1999; Bilal, 2000, 2004; Gross, 2004). Work that places emphasis

\textsuperscript{36} I do want to point out that I differentiate the teens’ own self-identification as a “student” as distinct from our dominant LIS research discourses that often place teens in the role as “student object.” I do not place myself in that legacy. Rather, I advocate that teens define their own positions. I agree with Anthony Bernier’s assessment that the dominant research on youth sees teens as one-dimensional (“student”, “worker,” “immigrant,” etc.), takes a position of lack toward teens, and limits what constitutes legitimate information behavior (Bernier, 2007).
on the youth experience in everyday life scenarios, particularly as it relates to libraries, is so
very necessary for we in LIS to better understand those whom we purport to serve. There has
been in recent years (Walter, 1999; Chelton & Cool, 2004), more research on youth user-
centered experiences in a diversity of settings (Dresang, Gross, & Holt; 2003; Tannock, 2001;
Druin, 2005; Mehra & Braquet, 2007; Dresang & Koh, 2009). Indeed, the 2007 Jesse Shera
Award for Excellence was given to research conducted on ‘tweens every day life information
behavior indicating issues of distrust, disconnection, and power relationships (Meyers, et al.
2007; Fisher, et al. 2007). There is yet a need for studies that critically examine youth and
school librarian expressions of information literacy that address issues of autonomy, agency,
and identity (Meyers, Nathan, & Saxton, 2007).

In addition, even in the emergent youth ELIS research that extends the information
universe beyond the school wall, there is the view that children and teens are either lacking (in
skill, understanding, or access, for instance); or are “digital natives” (Prensky 2001) who are
expert in “Web 2.0” (Madden & Fox, 2006) technologies. One might say that the youth in these
studies are viewed solely from an adult’s constructed view (Herring, 2008) that mirrors those
created of childhood in children’s literature (Nodelman, 1991; Hunt, 1992). Indeed, I would go
further to suggest that youth LIS information behavior research discourses define and re-define
youth for their own specific purposes. A “discourse of lack” can be identified by such words as
“barrier,” “failure,” “need,” and weighted terms such as “inner-city” or “urban.” Other studies
that refer to students as ICT experts similarly label. For example, “sophisticated,” most often
means youths’ use of legitimized resources provided by the library (e.g., Valenza, 2007); “digital
native” (also called “Millennials,” “NetGen,” or “Gen Z”) refers to youth being so adept at information technologies, that educators and librarians are called upon to partner with youth experts to be able to use—at the very least—a variety of social networking applications such as Twitter, Facebook, or the next new platform. There seems to be a need for nuanced studies of youth that are less dichotomous; that move beyond positioning youth bound by generation and role assumptions. What is still needed is what Chelton and Cool (2004) described as “specifying the meaning of ‘success’ in the acquisition of information literacy,” particularly from the view of a youths’ own meaning making, framed by their own lived information literacy experiences.

When considering the “wholes,” I am—perhaps a bit too obviously—put in mind of John Dewey’s *Experience and Education* (1938), “Experience: The Means and Goal of Education”: “...education, in order to accomplish its ends both for the individual learner and for society, must be based upon experience which is always the actual life-experience of some individual, “ (89).

Lived information literacy behaviors, then, are knowledges organized by what Dewey called a “defining continuity of action.” What this means is that there are permeable lines between school information tasks and home, work tasks and hobbies; if, indeed, lines exist at all (c.f. Given’s [2002] work that concludes that college students’ academic and everyday lives are, essentially, seamless). When we consider teens’ lives as students, we must also view the teen as inextricably linked within his/her whole information context (Agosto & Hughes-Hassel, 2005). In particular, teens’ lived information experiences are a strong example of what Dewey called “end in view,” in *Democracy and Education*: that thought and consequent action taken are seamless; the aim directs the means to solve a discontinuity (1916; MW 9:152-53).
Taking this idea of continuity of contexts, what of participatory media by young adults that makes use of tools and technologies that invert traditional relationships of producer and consumer? Much recent research documents young adults’ use of technologies, from Internet to cell phones and handheld technologies such as iPads™ (Druin, 2009), massive multiple player online environments (gaming) to instant messaging (c.f., Salen, K., 2007). At the time the survey data for the Cybraries studies was gathered, a Pew Internet and American Life Study placed youth’s use of the Internet at 87%; use of online gaming at 81%; and only 6% of those surveyed report knowing any youth who does not use the Internet (Lenhert, et al. 2005). Those numbers have only increased with use of mobile phones and other technologies (Lenhert, et al. 2010). (In the Cybraries research, 100% of all students surveyed reported using the Internet either at home, school, or in their public library.) Obviously, the “technological environment that surrounds a teen shapes his/her online life,” (Lenhert, et al., 2005, 35); and media use by young adults in their own information seeking outside of schools must be taken into account when examining questions of how students solve homework-based information problems. Reading news, making purchases, surfing for information about entertainment and recreation such as movies, music, and sports, and searching for information on more targeted topics such as health and fitness are leading areas of interest for youth using the Internet (Lenhert, et al., 2005). But they are not only “consumers.” Young adults create content at about half the rate of consumption, with expectation of that behavior increasing (Lenhert & Madden, 2005); and another Pew study reports that 85% of students write online in some form (Lenhert et al., 2008). Participatory media culture among young adults is an area of increasing research, with such notable funders as The John D. and Catherine T. MacArthur Foundation having launched
its five-year, $50 million project to study youth and participatory technologies’ effects on learning, play, work, society, and civic engagement (Jenkins, et al. 2006). The dynamic nature of learning in what I call “multimedia time” (which I estimate to be a somewhat faster than a “New York second”), is not lost on the U.S. Department of Labor—among others—either: the learner of today will have at least 10-15 jobs in his/her lifetime, needs to master change, compete globally, work in non-routine and interactive environments, and no longer navigates in a top-down hierarchal workplace (IMLS, 2009). A key aspect of the current trend in media study research and youth is how technologies redefine the nature of literacy; in particular, how youth participation changes existing notions of authority, identity, and what being “literate” means (c.f., Coiro, et al. 2008; Hobbs, 2009).37 Tools such as My Space, Facebook, Wikis, YouTube, Twitter, IM, texting, and mobile apps, and SecondLife/teen all become potentially risky when viewed from the position of schooling.38 These tools are used by students in their lives (typically) outside of the classroom; yet, they are typically explicitly prohibited; and in the case

37 For a powerful example of participatory digital learning of youth, see the MacArthur’s webcast “The Power of Youth Voice: What Kids Learn When They Create with Digital Media,” (Hobbs et al., Nov. 2009) presented by, among others, Nichole Pinkard, formerly of the University of Chicago Center for Urban School Improvement and founder of the “Digital Youth Initiative.” She works closely with Chicago Public Schools as well as the Chicago Public Library to “build bridges” between school and after-school worlds. Pinkard states bluntly that youth’s digital literacies are happening outside of school, because “kids feel a disconnect from school.” (http://www.macfound.org/site/c.ilkLX8MQKrH/b.4462309/apps/s/content.asp?ct=7631793)

38 I do acknowledge that there are certainly assignments that utilize use of media, where the student must create a movie or some product. A teacher may assign student groups to create a wiki, or students use Blackboard™ or another courseware product to post their project webpage. Students in this study certainly created videos for class projects such as a videotaped play of Persian history and a YouTube of an honors physics Rube Goldberg machine. But these videos were to demonstrate the learning of a specific subject or to document a process. These are not necessarily what I would define as youth expression. (c.f., this YouTube made by a teen in the study: http://www.youtube.com/watch?v=WYHJP3p-PNo. The students’ frustrated outbursts after twelve hours of so many attempts to water a houseplant Rube-style and their exuberance at success are heart-felt youth expression. The students’ YouTube actually has had over 22,000 views and pages of comments. The line is drawn in school, however, if a student uses a YouTube for a source and actually cites it. Clearly other students are using this YouTube to build their own Rube Goldbergers and to prepare for “epic fails” before success. But is it considered a “legitimate source” within school? Ironically, not if they cite it)
of the school research site, blocked—along with Google—to prevent students’ use. Information literacy as it is defined and implemented in the school library environment, then, often deliberately excludes these oft-participatory technologies; with little room for the expansion of literacies for which Bruce (2002) and Jenkins et al. (2006) call. While there is a growing body of research that calls for including youth information behavior in practice there appears to be an absence in the school environment Forging a new pedagogy that includes ELIS may be what is called for. (c.f., Kolb, L. (2008) Developing Everyday Technology Pedagogy in Preservice Teachers, a paper presented at the American Educational Research Association). Students are viewed by the institution typically in one role: that of traditional consumer, somehow void of information experiences that are very much different than those constructed for them in the school library. Furthermore, teens’ information experiences with non-traditional media (however that may be defined) are viewed with suspicion.

For instance, the idea that a database of magazine articles has greater credibility because it has been purchased and, therefore, presumably vetted may not be as valid as we move toward open source information avenues that compete with traditional media. Students who search the Internet for their homework first, particularly a Wiki—a socially constructed resource that is regulated by a community of editors/users—and then, if more information is needed, move toward online databases, and lastly (if at all) consult a book could be demonstrating a fairly sophisticated understanding of literacy that solves an information problem. Indeed, one could suggest that the students are "reading the institution," (Bruce, 2007) of formal schooling by negotiating institutional expectations (Osberg & Biesta, 2003). Or,
the students may be applying the principle of least effort. However, the students' approach may be seen with disappointment by high school librarians who view this process as exemplifying information "iliteracy," (Comstock, et al. 2006; Comstock, 2007; Comstock, 2009). These two views illustrate one gap in our understanding of information literacy in real-world contexts; and represent an area of needed research into the how and why of information literacy in high school cultural domains (Neuman, 2003; Tuominen et al., 2005; Lance, 2005; Neely, 2002).

Key to the current investigation is a critique of the epistemological foundations on which the “stories of information literacy” are constructed. At heart is who defines knowledge and how. What constitutes legitimacy of information and its uses is not a new question. Indeed, John Dewey stated—presciently—in 1912:

There is, therefore, no problem in education more pressing than the right adaptation of information, as socially communicated knowledge, with these modes of knowledge whose achievement involves active personal response. Without the material of information, individual experience is raw, crude, narrow, untrained. But without the organized assimilation of this material, knowledge tends to be useless pedantry, sheer mass, in the degree in which the body of information remains a special isolated set of facts and ideas not entering freely into everyday direct experiences, it fails wholly of the proper enlightening and directive function....

In order that information should be really informing, it is necessary that it be communicated in connection with an active direct experience, not simply in association with other information." (p. 250)

39 Or, as it was suggested by a colleague, the students may be employing the principle of least effort in their information seeking. Even so, does that mean the student is not “literate”?
The idea of “right adaptation,” is taken narrowly and exclusively in the information literacy discourse prominent in the United States today. Dewey’s ideas of the school being a community when “all individuals have an opportunity to contribute” (Dewey, 1938, p. 56) in a shared social inquiry take on relevance when we consider how to collectively construct solutions based on individual experience. “Experience”--as Dewey envisions as grounded in “environing conditions” that make full use of “the surroundings, physical and social, that exist so as to extract ...experiences that are worthwhile,” (Dewey, 1938, p. 40)—is absent. The choice of that absence has practical and philosophical consequences that leave “…no place for possibility and for liberty,” (Dewey, 1925, p. 8). Powerful information literacy discourses limit “the human and moral importance of thought and its reflective operation in experience,” (Dewey, 1925, p. 8). Potential creative reason is contained; and the student as an empowered learner who is already an active citizen in a changing and dynamic environment is limited. The stated role and function of information literacy instruction to create an information-empowered member of society—a “life-long learner”—is at practical and philosophical odds with itself.

Information literacy, then, could benefit from a situated approach that allows for the young adult experience—in and out of school—to be included when considering who is “literate,” (Berger, 2007)\(^40\). Taking a socio-technical view places information literacy not only within the

\(^{40}\) Pam Berger, librarian and information entrepreneur, offers several definitions of what literacy looks like to youth in Sandra Hughes-Hassel’s and Violet Harada’s excellent handbook, “School Reform and the School Library Media Specialist” (2007). Her action steps for school librarians include creativity, equity, and innovation borne of real-world technologies and life practices. In particular, she asks school librarians to rethink practices by re-evaluating purposes; the “why are we doing this?” question the librarians asked in this study. Berger, however, does not generalize all youth as somehow being Net-Gen gurus. While grounded in practice and citing standards such Project SAILS, she describes a flexibility and dynamism in her (albeit a bit
context of its environment, but also stresses the utility and function of practices to accomplish an individually constructed task within that given environment by using tools (Tuominen, et al. 2005). A student’s information practice is grounded in the neopragmatic (Sundin & Johannisson, 2005): in the simplest of terms, that (be it a tool or practice) which solves a student’s information problem is reinforced by experience. Experience legitimizes. Skills and process-based information literacy, as it is largely assessed and taught in schools in the U.S., excludes the student experience of success. Essentially, the student’s information and technology knowledge domains and discourses are discounted.

utopian) school library vision that does take youth’s information behavior—and youth’s ability to self-define “literacy”—seriously.
III. METHODOLOGY AND LIMITATIONS

I conducted a dual-site ethnographic instrumental case study (Stake, 2000, 2006; Zach, 2006), employing discourse analysis to make visible student ICT discourses. This approach offered a view on the positions of understanding of "information literacy" by teen students within the defined environment of the high school library media center and in the home. By examining information literacy phenomena in which the students engaged, discernible patterns emerged that provide insight into the nature of information literacy as it relates to everyday life information behavior. "Information literacy phenomena" is evidenced by the discourses the students employed, and it is my position that these are tools used for specific tasks within the socio-technological and epistemological environment of schooling (Tuominen, et al. 2005; Lankshear & Knobel, 2003; Osberg & Biesta, 2003). In particular, I suggest that students employ multiple information literacy discourses to accomplish different, often conflicting, tasks within the context of schooling; and that dominant information literacy discourses are privileged over indigenous information behaviors of the students. A rich picture of student-at-home emerged as uniquely compelling. Essentially, I examined who (which communities, i.e. cognitive authorities) define what (knowledge object/artifacts and attendant information behaviors) (Sundin & Johannisson, 2005; Burbules, 2006) in technology-rich school and home environments via multi-faceted discourses (Talja, 1999) of information and technology literacies.
A. Site 1: The School Library

The school research site was selected because of my ongoing relationship with the school librarians, technology coordinators, and district administrators conducting the Cybraries study. I returned formally in 2007 to interview available students who had taken the Cybraries survey to more fully capture their expressed information literacy behaviors. I created my own guided interview questions (Appendix B) based on the Cybraries survey questions, focusing on the individual student’s responses. As juniors in high school, they had matured from middle-schoolers to high schoolers, and their information needs necessarily changed. I also conducted unstructured interviews the school librarians as well as using the same guided interview questions I used with the student participants. My time spent observing in the library and talking with the students informed my unstructured interviews with the librarians on their understandings of what constitutes an “information literate” student. Through analyzing these interviews, I discovered what I term the “dark side of the moon” of high school students’ information behavior; that which occurs outside of the classroom or school library. Targeted discourse analysis of these interviews revealed students’ and librarians’ information literacy knowledge domains.

Inductive analysis of the structured and unstructured interview data of the students and librarians, lent itself to a constructivist grounded theory approach for several reasons (Charmaz, 2000). First, constructivist grounded theory takes into account the inter-relationships of multiple realities and voices within a social context. In particular, it assumes that knowledge is not objective, but subjective; collaboratively constructed from many “ways of knowing.” Data gathered and analyzed direct further data gathering, allowing for open-ended inquiry.
Furthermore, constructivist grounded theory explicitly takes into account the position of the researcher’s own experience and place. It is a good fit for a critical examination of what “information literacy” means, because I was constantly made to question my own “information literacy discourses.” The evidence of the emerging data required my own self-reflection, getting to the idea of legitimacy and whose voice is heard. Because of this, it naturally invited critical theory to be applied (Foucault, 1980) to question what we assume. It also required specific strategies of gathering data from multiple sources, creating constant comparisons as new data put previous data in a fresh light. I particularly value its “self correcting nature” (Charmaz, 2000) that allowed me to “...try to find what research participants define as real and where their definitions of reality take them” (Charmaz, 2000; pp 523). My initial analysis was conducted using a selective coding process (Charmaz, 2000), with my noting “motifs” for more analysis.\footnote{Initially I called these “keystones”, but it became clearer to me the words functioned more as “motifs” (Gee, 1999). Given my belief in the power of narrative/story, I adopted the word “motif” because it resonated strongly as an analytical device. “Motif” both addresses the themes in the data as well as the individual “speech unit.” It allows me to broaden individual units to their situated meanings. Additionally, throughout the years of interviewing and doing research in schools of teacher-librarians in Chicago, I have been building a folkloristic theory regarding how school librarians adopt motifs that cluster into “tale types” (e.g., the heroine-journey tales). While I will not address that here, I admit its place at the fire.}

Transcription of the student and librarian interviews, review of contemporaneous field notes from site visits and observing instruction, and reviewing material objects (library handouts of information literacy models, password key sheets, and homework assignments), it became clear to me that discourse analytics could provide a way into the meaning being made by the teens and librarians. I was able, through repeated review of the interviews, to identify motifs that represented the broadest gaps between the teens’ and the school librarians’ apparent perceptions. These further inspired conceptual categorizations that I began to see as related to...
power and identity for both the teens and the school librarians. These *in vivo* categorizations are directly tied to the language used by the teens and librarians themselves. There was, therefore, a gentle and gradual movement through the data I gathered at the school library site that re-focused questions based on how the students were defining for themselves their larger information lives. Naturally, I engaged in constant comparative analysis as I reflected on the expressed thoughts of the teens, teens’ past responses, and observed behaviors. Constructivist grounded theory, then, offered me the type of naturalistic inquiry I believe complex socio-technical phenomena require to build understanding.

Data gathered revealed librarians' understandings of information literacy as evidenced in the teaching-learning relationship (instruction; curricular artifacts; interviews); as well as revealing students' position of understanding. The gap between these two communities inspired taking a more ethnographic approach, and discourse analytics offered another lens by which to view the phenomenon under study. Individual interviews provided for a central discussion of the topic, allowing students to contribute their voices. In spring 2007 students were asked to describe in their own terms their understanding of the nature of inquiries, research, resources, technologies, and roles.  

There is a longitudinal element to the research, as well, because each participant had "grown up" in the information literacy curriculum in the district; and as upper classmen in 2007, gave a view of the "mature" student. As a means toward better understanding the discourses  

42 See Appendix B for questions used to spur conversations in the teen interviews. These questions were tied to both the individual student’s responses to the survey, as well as the general trends revealed in the aggregated data. The interview questions were identified as points needing clarification from the original student surveys, and were then classed into genres of information literacy phenomena (tools, activities/behaviors, relationship/social).
employed by the students, the interviews provided raw data on which discourse analysis was done.

Students were interviewed for one class period during the spring of the 2006-2007 school year. Students were recruited from those who identified themselves on the survey as wanting to be contacted. Of the print surveys of students still in school there were nine, and from those online who self-identified, there were 73 who were enrolled in the high school. Given the strict parameters of interviewing students by calling them out of class; and the rigorous requirements of scheduling to accommodate individual student needs and standardized testing (PSAE; AP), five students were available. All respondents were interviewed. Because of the nature of discourse analysis, number of participants is less valuable as the architecture that emerged from their individual narratives (Tajla, 1999). The interviews were conducted in a space made available within the school during the school day.

As described previously, the high school research site was selected for several reasons: its reputation for exemplary leadership by its district librarians in incorporating information literacy within the demands of a public school curriculum; its technology-rich media center; and its librarians' impact on other librarians through professional development programs in the state. In addition, the high school library is working collaboratively with a HAPLR-ranked #1 public library for a city of its size in drafting coordination of its electronic resources and homework help.

I wanted to select an “ideal” district such as this to study, largely because if there was a gap at this district, what might it mean for those less privileged? Of those schools in the district, I selected the high school when I saw that the data suggested that students at this one high
school had the highest favorable response rate to use of materials and school library resources; even so, this was only just under 40%. In other words, in a best-case school within this best-case district, over 60% of the students were perceived by librarians as “not getting it.” The location compelled further investigation.

B. Site 2: Teen at Home

A gap still remained in understanding the lived information literacy behaviors of teens outside of the school library. At this point, I added one more teen to the study—my son, a young adult Latino\(^{43}\)—to better understand the lived information literacy experiences of a student in his own home during his entire junior year in high school, using the groundbreaking ethnographic work of Wolf and Heath (1992) as a model. The private world of the home is privileged space. Lived literacy practices—what it means to “be literate”—are delicate constructions made in social context; and in this case in the family home. I turned to Shelby Anne Wolf’s and Shirley Brice Heath’s sensitive and insightful study on literacy practices of Wolf’s preschool and school-aged daughters’ because I believe—perhaps because I was a youth librarian, perhaps because I am a parent—that literacy practices are rich in the home. “Information literacy”, in my view, is no different. Nowhere in the information behavior research of teens is there an ethnography of a high school student in his own home. The teens

\(^{43}\) I discussed at length with my son about his personal cultural identity as “Latino” and “White.” His heritage raised questions during the year of this study. He was particularly sensitive to the stereotypes of Latino teen boys as “gangbangers” who dropped out of high school and didn’t go to college, much less set a goal of going to an Ivy League as my son had. We discussed if we should address the stereotype specifically, or if I should simply include his reflections as part of his everyday information behaviors. After much discussion, he decided he didn’t want me to focus on that as much. But I do intend to return in a targeted way to this idea of Latino teen information behavior and identity construction: who is represented, by whom, and for what purposes? Whose discourses are adopted and why? Necessarily, I leave these questions for the future.
are often objectified: their own tacit ICTLs invisible to the researcher, because of his/her outsider status. My attempt to rectify this absence was to add to my research group another teen—my own son—to whom I had access, which is a key step toward solving the “access problem” when conducting ELIS research (Casey, et al., 2001). “Getting at” the lived information experience of a high school student is yet a gap in youth information behavior research. I admit being fortunate to have had an opportunity to be granted such access to what is a private world. Much discussion was had between my son and me before taking this step. For this phase, I used unobtrusive observation (including search histories in web browsers, homework artifacts, online communities, email, courseware artifacts, gaming, etc.); structured (using the same questions posed to the other teens) and unstructured interviews; teen student as reflective researcher on his own information use; and, of course, the daily moments (for better or worse) that make up living with a teenager. My 24/7 access offered a truly rare glimpse into the lived information world of a teen in what many consider a pivotal high school year as teens are faced with information-intensive decisions such as selecting colleges, pursuing employment and volunteer work, acquiring a driver’s license and driving independently, all in addition to homework loads, SATs, ACTs, and A.P. exams. Junior year represents a transitional year as teens move toward greater independence.

C. Discourse Analysis

Discourse analysis offers a view toward understanding the meaning being made of information behavior within a socio-technical environment. Through discourse analysis, claims about one’s knowledge and expertise, role and political position within the social context under
study, and philosophy become more evident. Indeed, discourse analytics and Pragmatism are logical companions in analyzing a social question: as Dewey states, Pragmatism is an “...instrument in determining the meaning of words and the vital importance of philosophical beliefs” (1926, p. 7). Particularly, the expression of the information relationship engaged in by high school students with high school librarians reveal multi-utility discourses employed instrumentally to accomplish sometimes similar, but often unique, tasks by these two communities. “Information literacy,” then, emerged in the case study environments as variants of action reinforced by experience, and guided by reason; all of which are bound to identity and agency.

Information literacy discourses used by the students are not only tools in and of themselves, as noted above, but are also tools for me-as-researcher to better understand the nature of the information literacy teaching/learning relationship; particularly when examining apparent gaps between “info lit” as described by school librarians and what students actually do. Discourse analysis as research method gives LIS researchers an alternative lens by which to understand information behavior in real-world, socio-technical contexts; and is of particular use when engaging a critical theoretical view (Whitworth 2006; Andretta, 2006) of information literacy. Discourse analytic method is a way into the lived text of an institution, offering the researcher a tool to get beyond the positivist approaches in school library research that often neglect questions of power, authority, identity, and agency. Essentially, by studying information literacy discourses, there is an opportunity to delve into ambiguity and ask, “Who defines what and why?” Exploration of that question frames the present inquiry.
Discourse analysis method as having value in LIS research has been expressed over the last decade (Budd & Raber, 1996); and perhaps most notably applied in discussion of LIS theoretical frameworks—the “language” of our profession—by Frohmann (1994). More recently it has been used to examine information behavior and meaning specifically in workplace information communities (McKenzie, 2002; Savolainen, 2004; Given, 2002; Budd, 2006). Discourse analysis in educational research has been used to address questions of social equity and instructional appropriateness in a post-industrial age (Luke, 1997), with a particular stress on sociocultural critique of schooling/authority. Further, case study research was discussed by Talja (1999), who argued that by examining the particular discourses employed by library users, macro-social Discourses could be identified; concluding that discourse analysis makes evident tacit meaning-making that has practical, real-world consequences. She particularly stressed the contextualized discourses employed as objects of research in and of themselves (Talja, 1999). Rarely, however, is discourse analysis used as a tool to examine information literacy as a socio-technical activity (Limberg & Sundin, 2006); and rarer still in critiquing information literacy teaching/learning in school libraries (Kapitzke 2003; 2006). Indeed, the present research—in part—stems from Kapitzke’s call for researchers “...to consider knowledges, theories, and practices different from those that are currently dominant...” that explore the “potential of post-positivist research that is discourse oriented and socially critical,” (Kapitzke, 2006). 44

44 As I reviewed email exchanges with Drs. Cushla Kaptize and Chip Bruce, my “theory godmother” and research director, respectively, I found one as far back as 2003 that I can say with confidence started me thinking about discourses at all.
Stepping back for a moment, what is meant by “discourse?” Discourse analysis method offers more than perceptual data; rather, the discourses employed reveal in concrete ways the subject’s experience of a sociocultural reality. The epistemological assumption in the previous statement is, of course, that reality is constructed and transactional; not fixed and “knowable” in the sense of existing outside of one’s horizon of experience (Habermas, 1984). Discourses both shape and are shaped by the culture that is made up of both the individual and the collective. Discourses, however, are not neutral; they, according to Michael Foucault, define and control knowledges, relationship, and institutions and become evident in a culture only when we examine the thematic “texts”—be they oral, written, or visual—of a society (Foucault, 1980; Luke, 1997). When we consider discourses, then, from this critical theory perspective, we take into account their power to constrict, limit, and contain; and the paradox of humans—as social, meaning-making beings—is our struggle against these “containments.” In practical terms, “discourse analysis” in this study might be best defined as a close analysis of the voices within the social context of a school library as they relate to information literacy phenomena, including examination of the physical, oral, and imagistic “texts.”

The methodology specifically rests on the broad (Gee, 1999) and socially constructed (Budd, 2006) end of the discourse analysis spectrum, rather than the narrower linguistic (e.g., conversational analysis), taking the naturalistic view that information literacy behaviors are socially and culturally constructed within context. I particularly drew on James Paul Gee, with the understanding that some may find him polarizing. Yet, his thinking firmly informed my own, lending itself to critical inquiries regarding self-identity relative to communities. He defines “discourse” as not just the language, but the work that language does in communities that—to
me—made the most sense. The “textbooks” in school weren’t those with firm cardboard covers and fraying bindings; they were the motifs (and manner in which those motifs were used in different ways with friends, classmates, teachers, and librarians) that found their ways into the way teens described their student lives. For example, when I read a passage of Gee where he is describing a group’s use of language (street-gang members), I immediately recognized “my teens” in the study:

...you have to speak in the ‘right’ way...act and dress in the ‘right way’ .... You also have to engage (or, at least, behave as if you are engaging) in characteristic ways of thinking, acting, interacting, valuing, feeling, and believing. You also have to use or be able to use various sorts of symbols (e.g., graffiti), tools (e.g., weapons), and objects (e.g., street corners) in the ‘right’ places and at the ‘right’ times. (Gee, 1999; 21).

I was as struck as I was when reading Chatman’s description of information worlds in prisons. I could easily replace these with examples of my own: doodles on school library database password sheets, surreptitious use of YouTube and Google, and finding unfiltered internet access such as at the public library or in the home.

Both the teens’ at the school library site and my son’s ways of communicating regarding information literacy behaviors illustrated their relationships to society, community, and self. Despite being from different schools (the schools themselves were similar in ranking, socio-economics, ethnic demographics, and professionally staffed libraries) the teens’ descriptions of their experiences converged. Roles and lines of “legitimate” knowledge and values became evident, and there emerged demarcations—or boundaries—between the cultural worlds of the teens relative to the school library (and school librarians). Socio-technical approaches to understanding information literacy as a social activity within a “workplace” environment
(Tuominen et al., 2005) informed identification of data as relevant to values, knowledge models and “ways of knowing,” institutions, roles, activities (including tools and technologies used), relationship, identities, and power relative to the school library. By examining the speech units emphasized by the students’ intonations, pauses, and contexts, a picture of the teens’ world views were made clearer, light can be shed on larger societal issues (Gee, 1999). In particular, it can reveal a person’s position in a community, how and with whom they identify themselves, and their sense of status and relationship.

I adopted Gee’s definitions of “grammars”: the processing of the speech itself as “a way into the texts” of a culture—and in the case of my research, of the small world of youth information behavior. While being on the broad end of the D.A. spectrum, I processed the teens’ interviews by initially looking for patterns so that I could recover their meanings. I view D.A. as a conversation between the speaker and his/her communities; and I as “hearer” extending that conversation to/with me and my own. I somehow pictured the teens and I seated at a court’s Round Table, each of us representing our various kingdoms and their constituent fiefdoms; imperfectly, perhaps, but in peace and for the purpose of a sincere desire to understand and be understood.

For this study, I processed the interviews of the teens by identifying clauses (“speech units”), which are made up of a subject-verb and its dependent cluster. I focused on the content words of a single speech unit. Stanzas are constructed of several closely linked speech units (idea units), and (for my purposes during research) were numbered: new idea, new stanza. Within each stanza, the speech units are sub-categorized. Lines are determined by their content, and often these coincide with a teen’s slight pause or hesitation. However, if a teen
closely linked the subject-verb with its cluster, I do not deconstruct what I perceived to be his/her “choice by voice.” I denote stress patterns by using all capital letters and I make a parenthetical note when there is a rise or fall in intonation. Both stress and intonation were defined as a vocal pattern that I heard as “outside the norm” for that particular teen. I included “ums” and “uhs” as functioning units; and my interpretation of these depended on the individual’s use. I saw them as falling along a spectrum: sometimes they were basic signals of delay; at other times they functioned as a way in which the teens maintained control of the conversation; while at other times “ums” and “uhs” indicated a sense of losing control of the content of the conversation and attempting to gain equilibrium (Fox Tree, 2001). The latter I interpreted as a term of uncertainty. I treated pauses as functioning similarly, and noted when a pause seemed outside of the normal speech pattern of the individual. During this process, I decided discourse analysis is a Russian nesting (matryoshka) doll\textsuperscript{45}.

But what does this mean? Let me show you by way of example. By examining the word “database” from an interview with one of the students, a view into a student’s information behaviors may become clearer. Below, I demonstrate how I used discourse analytics.

In school libraries, for instance, purchasing and providing access to electronic databases is core to representing value to students, faculty, and the school community. Often, the databases are selected and purchased by the librarian only after considerable discussion, budgetary debates, and evaluation. Once purchased, these are the tools that are most likely

\textsuperscript{45} “Matryoshka principle” is also implied here: noting the nested relationship of social discourses of the teens’ small worlds. Another implication: “matryoshka” means “mother/maternal,” and as a mom placing herself in relationship to her son’s information life for a year, I couldn’t help but smile wryly.
taught in information literacy instruction, focusing on the needs of a certain subject or project. Much is invested—monetarily and otherwise—in a database. Therefore, I selected the word “databases” for the following example of discourse analytics.

One student, Ariel, (pseudonym), a self-reported strong student and a member of her lacrosse team, described her process for finding information for homework and databases’ roles:

Stanza subject 1: Databases

Ariel:
1a. And we also have a lot of, um,
b. what is it, they call them ‘bases’ I think?
c. I don’t know;
d. our school gives you a whole info-, information
  e. then they give you passwords to get into it
  f. so we can go, like, safer—
g. I don’t know what they’re called,
h. I think they’re called ‘bases’,
i. I’m not sure.
j. And, ummm, we can go in THERE,
k. and find information that we CAN use that
l. it’s very reliable.

Stanza 2: Search engines

2a. But other than that
b. I use, Yahoo.

c. So.

Ariel’s description of her information search for a U.S. history project relative to databases reveals several interesting points. “Databases” are numerous and owned, that can be claimed by the school institution (“we have them”); are named by others (“they”); are granted access to by both the institution (“school”) and a power outside (“they”); are places that one can “go in” to find institutionally legitimized and less risky information (“that we CAN use” that is deemed “safer” and “reliable”). When referring to databases she uses terms of uncertainty: “um,” “I think,” “I don’t know,” “like,” “I don’t know,” “I think,” “I’m not sure,” and “Ummmm.” At the same time, Ariel uses the affirming “I use” with a concluding “so” when referring to her preferred search engine, Yahoo. Databases are supposed to be valued, supposed to be what she is using given the normative information behaviors expected of students in the social construction of the school library. The word “database” is a boundary of the small world in which a student operates. Her misunderstanding the word “databases,” ultimately deciding upon “bases,” is less a reflection of information illiteracy as it may be seen as the tool simply not corresponding to her own information experience. Using a favorite and familiar search engine may be an empowering act, an exertion of an identity in a world that is not safe, reliable, and contained. Databases barely register as relevant, much less prominent, in her information-seeking in the context of school. She is making this determination from what Chatman calls “worldview”: her own experience as a student deems what is useful—or in this case—useless. Her “information behavior” is her first choice of Yahoo within her small world of insiders (students) and outsiders (librarians). On her survey and later in the interview, she
stated she is “very confident” finding information for schoolwork. “Bases” represents the student’s discourse and is one example of what marks the small world of teen information behavior relative to the school library.

In co-location, the librarian refers to databases as “THE databases,” rarely dropping the article, giving the tools a certain position of stature among library resources not accorded to such things as “books,” where the article is rarely used. When this was pointed out to the librarian after analysis of earlier transcripts, she frankly stated, “Well, of course. Technology is GOD!” In written curricular materials, databases have their own sheet with bolded words such as “CONFIDENTIAL” at the top of the page, and particular stress is placed on not sharing the 12 unique passwords and usernames needed to access the purchased resources. The librarian’s role as gate-keeper is certainly evident; but also her ambivalence toward a resource tool that seems to need both controlled and promoted; seems to simultaneously dictate delivery, instruction, and budget, while also being a point of pride.46 For the librarian, to have so many databases indicates a budget that she has been able to justify to her administration leaders: an indicator of power within the institution. Use of those databases relates to that justification, to increased budget, and consolidation of power, bearing directly on her professional identity and status within the school and her larger community of practice. My interpretation of her descriptions is that the librarian, too, is in a small world defined by social norms, worldview, and information behavior. Hers, however, is that of the outsider when it comes to teens. The

46 The librarian described in interviews in spring 2007 her experience and use of databases, and their position in budget justifications. She stressed the need for professional librarians to be savvy and aware of how school library power is represented within a school. She also pointed out she felt restricted and limited by feeling the need to teach to the database.
school librarian has a world view that determines for the students what is considered appropriate; the social norms of a school—in the information lives of students, at least—require control, containment, limitation. Although a resource may be useful to the teens from the view of the librarians, unless it is legitimized by the student-insiders, it falls into what Chatman calls “second-level” information; hence, “bases.”

While this is a brief example of how discourse analysis and small world theory can be applied, representational repertoires of their respective community domains begin to be visible. By closely analyzing the transcripts of interviews, three motifs became clearly evident as being relevant in the teens’ descriptions of their information behavior in contradistinction to the school library/librarian discourse: “research,” “resource,” and “reliability.” These “Three Rs” arose again and again. In particular, using Chatman’s theories of Life in the Round, we begin to glimpse the teens’ small world growing more distinct. These motifs were not initially what I had anticipated, expecting to use “database” and “information literacy,” for example. But neither had much significance to the teens in the study, drawing either blank stares or vaguely communicated understandings. So, the motifs themselves that I ultimately—necessarily—selected, relate to power, authority, agency, and identity within the Life in the Round that constitutes the teen relative to the school library; and have implications for such questions as “How do we define ‘information literate’ students?” “Who owns information and what role does its ownership play?” “What relevance does information literacy instruction that focuses

47 I strongly considered the word “relevance” as that emerged as a theme. But I realized that it related to all “Three Rs".
on databases have for students?” And even more essentially, “What is knowledge and whose definition is privileged and why?” These initial lines of inquiry emerged from this contextual discourse analysis, and point toward a way to make explicit values, roles, and knowledge views that play out on the stage of the lived information world of teens (if not in the school library, as I originally had expected).

D. Data Management

Interviews conducted of the students were recorded using analog (cassette) recordings. Transcription was done by me personally, and I converted to digital audio recording some interview excerpts for conservation. The transcripts included all utterances and pauses. Field notes were written in the school library and summaries written in the home. Material artifacts gathered at the school site included: school site photographs, one survey taken by the students, information literacy curriculum, and emails with librarians. In-home data included: screen shots of search histories and online behavior, homework assignments, digital photographs of the teen’s workspaces and gaming, and school library instruction given and used from home. Field notes were organized in OneNote, and the at-home teen captured and wrote his own narrative of selected information-intensive assignments using this tool. All digital data were kept on a finger-print protected computer hard drive, and backed up daily to a secondary enclosure. Physical data are maintained in a locked file cabinet in my at-home study, and will be maintained for a minimum of three years. As noted in the attached IRBs, all consents have been obtained by parents, student participants, and librarians, and all names have been changed. I
ultimately decided against using any software such as AtlasTi or NVivo as a tool for qualitative analysis. For better or worse, I “lived” the data.

E. Limitations

One question that haunts me is simply: “Can we ever get to the ‘lived information experience’ of a high school student?” In part of the research, discourse analysis of the student interviews at the school offered one view into the meaning students make of “information literacy.” But I was not privy to their homes or their work and volunteer places. Their descriptions of these activities placed me outside of their worlds. Adding my son to the research group was an opportunity to add to the view of teen information behavior. But in-home study of my own son posed its own challenges. While he was a high school junior at a similar high school, it is a second site.\footnote{As a graduate student evaluator for the Graduate Teaching Fellows in K-12 Education (GK-12) project initially at the National Center for Supercomputing Applications and continuing under the auspices of School of Liberal Arts and Sciences at UIUC, I found myself compelled by analyzing successful technology uses in high school science classrooms. Such databases and tools as Biology Student Workbench and ChemViz were two types of NCSA-developed and enhanced products used by the students. A primary evaluation site was one of these participating schools. I was so impressed with the school’s integration of technology in the classroom, I actually moved into the district so that my son could attend. Like my primary research site, his school is in the top five publics in the state.} Furthermore, there were questions that plagued me as I did such ethnography: “How ‘valid’ may my son’s experience be? How does he represent other teens? How does my relationship to him bias the data?” I suggest that, because this is a case study in which becomes evident the small world lives of teens’ information behavior relative to their status as students, my research offers a glimpse of the “shadow side of the moon” of teen information use that is absent in the literature. His experience is one part of information literacy behavior, and therefore valuable to the whole. I was constantly aware of the balance
between privacy and my own desire to include what I considered significant. I invited him to review all of my field notes, and I received permission to include material. He, over the 9 months of his junior year in school, made it clear what I could not include. Some days he simply didn’t want to be observed or asked questions. Other days he just wanted to be a teen relaxing after school playing Wii or PS2. Toward the end of the study, he expressed how “annoying” I could be “asking all these questions” about a resource he used for an Advanced Placement U.S. history exam. The curious tension between being a researcher, a youth librarian, and “mom” created a triple-self: I was, one could say, the ultimate “participant observer.” I am put most in mind of Shelby Anne Wolf’s expressed dual consciousness as she parented and observed Lindsey and Ashley in their re-construction of texts and how inseparable “data” and life are (Wolf and Heath, 1992, p. 13).

Other obvious limits must be noted: caution had to be exercised not to unduly influence him. As with the other teen participants, I was aware of teens’ need to conform to an expectation of what is considered the correct answer, given the "discourse of schooling." I also wrestled with the power relationship between the teens and me. How could I, just by the fact of being an adult (not to mention being an academic, librarian, and parent) address the irony of my position? In the end, I have to admit the awkward tension of discussing “authority” while being a part of the very hegemony I am questioning. In addition, all of the teen participants were self-selected based on previous interest in the topic, thereby offering a potentially too-unique perspective on the research question. The nature of case study research is to hold in tension the particular versus the generalizable; the specific experience and how it can inform our broader understanding of an issue (Stake, 2000; 2006). Using my son as a participant placed
me more explicitly as a participant observer, further stressing this tension. Yet, even with these caveats, the interviews with these particular teens on whom there is a portrait of technology and library use both in the home and at school, are still valuable for the slices of information life revealed. Others working with the same data may come to other conclusions, emphasize other themes, or outright disagree; and in a few more years I, too, may shift my position of understanding. I allow the research thus far to be an open-ended inquiry with the admission that “validity is social” (Gee, 1999).
IV. STUDENTS AND THE SCHOOL LIBRARY’S “INFORMATION LITERACY”: “RESEARCH,” “RESOURCE,” AND “RELIABILITY”

A fair question to ask is why “information literacy” is not one of the most fruitful phrases/words in my discourse analysis. It should come as no surprise to practicing school librarians: simply put, it had little meaningful associations for the students in the larger survey or in the interviews. I do not view this as “instructional failure” on the part of the librarians, but illustrative of yet another boundary that defines the teens’ small world. That said, I ultimately decided it was a less clear lens by which to view teen information behavior. Students responded uncertainly, often guessing or parroting learned definitions without investing their own understanding. At the least, it was not an empowering term, and not one used in their own small world. I run the risk of belaboring the point, but I include the students’ responses as an indicator of the term’s irrelevance. Remember, each of the students was raised in the same information literacy-enriched curriculum from middle school on, and I used their initial surveys to guide the interviews. Again, I use the voices of the young adults’ themselves to illustrate. The last I call “Teen” to distinguish my son from the school site participants. I asked the same question of each teen: “What do you think ‘information literacy’ is?”

Student 1
Information literacy?
Maybe, like,
finding overall answers
maybe a place
where you can get
a general answer
but maybe not just--
maybe it could be
the wrong or right answer...

So here, it can be an over-arching ability; could be a place to go to “get” an answer; and
is “right or wrong.” Uncertainty is marked by prolific “maybes.”

Student 2
To me,
information literacy
kinda’ just seems
a broad term for
how do you see,
like, information.
Like, some people--
some people are kinda’
visual, like,
you can HEAR
maybe, like a certain (thing)
you could hear
a stat, for example
and someone could say
“98% of people do this”
and for some people
you have to see it
like, you see a graph
and you’re, like

“Oh, I understand this now”

cuz you see a visual representation.

But other people are like,

“I need it in black and white writing”
because basically (inaudible) in this society
—even myself included—
we all enjoy,
or we all do,
we all lie.

And so,

when we see anything in black and white
we’re like, “It’s true”

Usually, unless it says “fiction” or something on it.

You KNOW it’s true,

so you feel secure with it.

You know, so (pause)

that’s kinda’ how *I* see it.

You can see it

as a broad spectrum of just information

or just black and white.

“This is how it is,
this is how it always has been,
this is how it always will be.”

That’s how some people look at it.
I do. You know, 
cuz I, uh, 
I don’t like 
—there’s like— 
it’s all kinds of different 
it, also— 
Cuz that all just, you know, 
book, it’s also a— 
to ME 
‘information literacy’ doesn’t even have to be 
exactly technically in a BOOK. 
It can be— 
this whole intelligence thing 
if you can remember it, 
are sometimes a story— 
you can get the bits and pieces 
out of it 
if you need to remember it, like. 
When, ah, 
a story I tell my buddies 
is the time I punched a window. 
I was in a bad mood, 
didn’t mean to break it, 
but I punched a window. 
I tell them the story,
first, well, ‘cuz it’s funny,
and also to get them to understand, like,
at one time I’d, like,
it’s, you gotta make sure—
I’ll tell the story,
like when I made one of my friends get (into a temper?..unintelligible)
you gotta keep it in check or else,
you know, I was, ah, on the All-star Baseball team,
but after that
I got like nerve damage for like
well, for a little bit,
and well it’s fine now,
but ah, I couldn’t play baseball.
So, I was just like,
“You gotta keep it in check, or you know,
you can’t go back in time
and change these things.”
So, you gotta make sure
you take what you need to out of it.

While long, this is one stanza, a single, almost stream-of-consciousness narrative. In the student’s mind all of these are “information literacy”. It could be visual, relate to lies and truths (credibility), is black and white yet inclusive and broad, endures the test of time, and is perhaps even monolithic. Interestingly, he also includes story, the power of a “cautionary tale” told to friends. “Information literacy” to this student is also the ability to create, from personal
experience, a narrative that carries potential meaning for his friends. It places him in a position of experience, authority, and leadership within his athletic friends. He reaffirms his own identity as an “All-star” athlete, which affords him prestige among his peers. This is lived literacy. Uncertainty here is indicated with “seems,” “likes,” “you know,” and “maybe.”

Student 3:

Uuuh...
I really don’t know.
Um, maybe like,
it’s like...
finding information from literature?
Like books, maybe? (laugh).
I really don’t know

This student actually described later in the interview a fairly developed and discretionary information behavior practice that would seem to satisfy school librarians’ definition of a truly information-fluent, successful student. But again, we see that the discourse of “info lit” is unfamiliar or even unknown.

Student 4

“Information literacy?”
Uh. Probably, uh,
not only, not only
getting facts like
and information about a topic,
but also making sure
they’re detailed enough
to be
to understand them
and for someone to be able to interpret.
(Pause)
Am I anywhere close? (laugh)

To this student, it’s an act of retrieval on a topic; “factual” with reliability implied; it’s several information objects that are not general, but specific; and easy to understand for use.

But again, no belief or confidence in the exploratory definition put forth.

Student 5:
Um, I think (rising voice)
we SORT of went over
the definition of it,
like, in one of my classes.
Um, like,
I think information literacy is
being able to find, like,
the things, that, like,
the facts that you need
-- that you want to find.
And, like, being able to tell, like,
which sources are credible,
which sources aren’t.
Um, and like, being, like,
I don’t know,
being, like,
a smart CONSUMER of information (rising voice)
That’s what they, like,
call it and stuff.
And so, like,
it’s like going out
and BUYING stuff,
like, being able to, like (laugh)
this is a bad analogy, but
like being able to, like
find quality stuff
for less (rising voice)(laugh)

Moving beyond the obvious “likes,” and how they function to this student as an
opportunity to organize a response, she still expresses doubt. Her definition, however, does
mirror the key aspects teachers and school librarians (the “they” in her response) stress: ability
to find information objects that are needed and wanted, an ability to discern “credible” “facts”;
and being a critical consumer. She knows what the social norms of the school require, and she
responds consciously. Of note is the idea of information as a commodity that the student wants
to acquire at a bargain price. The implication here, of course, is that if it’s free and easy to get
and credible enough, all the better. This student, too, was a top honors student in the district,
as well as working in a medical office and being on her school’s lacrosse team.

   Teen (in home study)
   Well, to me,
it means just
being able to find and evaluate information.
Basically, just how well
you get the information you need
to complete an assignment,
or information you just need in your everyday life.
So it’s about efficiency in my mind.
And the ability to separate good information
from less useful information.

SLC:
What do you mean by “good” information?

Teen:
Well, information that would
satisfy an assignment
or more broadly
information that is important and relevant
to YOU.
Because, you know
there IS a lot more information
available on the internet
than you could possibly need.
And it might not be,
you know, inaccurate,
but if it’s not the information
that will help you RIGHT NOW
then it’s not really “good”.
So, if you’re “information literate”
you can more efficiently,
more quickly
find the information
that is adequate
for what you need to do,
you know, at THAT time.

My son had an educated response, having been observed by his librarian mother for his entire life, not just in this study. From history fairs in elementary school to science projects, cultural fairs and citizenship tests⁴⁹, he had been mentored, tutored, and cajoled. As a child, he had waited for me in the library media center when I was a high school librarian at his K-12 laboratory school, and had been taken to libraries, library lectures, and had even helped me craft the questions used in the student surveys. He had opportunities to reflect on the idea of information literacy in ways the other students did not have. Never-the-less, I was surprised by his introduction of the dynamic, individual, and temporal aspects of what it may constitute in

⁴⁹ During the year this part of the research was conducted, his father, a native of Bolivia, became a citizen. Although his father is a successful engineer, his reading ability in English poses challenges in a time-crunch world of vendor deliverables and shortened launch dates. My son created a study guide to assist his father to take the United States citizenship test by adapting a PowerPoint from his own junior-year Constitution exam. Researching, adding images, using humor, summarizing into bullet-points, and employing the art of “drill and kill,” he exhibited a host of what I would call sophisticated information literacy behaviors in an everyday life situation in the U.S.: helping a parent navigate citizenship. My son placed himself in the community of many Latino teens who act as information navigators for their English-as-Learned-Language parents. Did my son cite? Did he use any library resource? Did he doubt his ability to judge what was “good?” Did he even ask a librarian? No. When I asked him—perhaps with an undertone of hurt—“Why not?” he responded, “Why would I?” He was supremely confident in his abilities to find, apply, and create. His dad passed.
the life of a teen student. His confidence in what was “good” rested on his own discretionary powers, not what others told him was “good.”

What each of these responses implies at the most basic of level is that information and its meaningful use to teens is socially as well as individually constructed; and that while the school librarians in the study expressed dismay at the answers of “their” students, these descriptions reveal both the disconnections and connections made by students with information literacy discourse.

In contrast to the somewhat dead-end of the term “information literacy,” as the teens’ discussed the what, why, how, and where of information, terms emerged that raised interesting, individualized, and even empowered responses. As aforementioned, I ultimately identified (perhaps “limited myself to” is more accurate) three motifs that allowed me to consider the teens’ information worlds: “Research,” “Resource,” and “Reliability.” Both “research” and “resource”, while present in the original Cybraries study, were not specifically emphasized; however, the terms were used in particular by the students in my interviews. The teens’ use and adaptation of these specific words spurred questions surrounding the nature of finding information in order to solve a gap or problem related to school assignments and in everyday life. From these two motifs arose questions that addressed credibility, legitimacy, experience, identity, and autonomy. The word “reliable” was raised by the teens in light of their schooling regarding “right” sources. But in their own narratives, “reliable” most often came to be defined by an environment of shifting needs, ultimately being a judgment call all their own. “Reliability”, then, is a nexus between “research” and “resource,” a Rosetta Stone of sorts. It, perhaps even more clearly than the other two, allowed me to identify the teens’ small worlds
relative to the school and its library. I admit, more terms than these appeared and disappeared in my many months with the data, being written on my study chalkboard, circled, starred, underlined, discussed, crossed out, erased, only to be written again. The “Three Rs” are the ones that I believe best provided a focus for me to reflect on the students’ information behaviors.

I was compelled by the idea of how “research” was described in gradients (with discrete classes of information tasks being defined); what constitutes a “resource” (almost anything, but within the environment of school clear lines of “can and can’t” are noted); and “reliability” resting on dynamic ideas of legitimacy grounded in experience. The lines between the Three R’s are fluid, being sometimes more, sometimes less distinct. Therefore, I relied on the emphasis of the teens’ own contexts for where I ultimately classed them within a motif; and while those classifications may appear “arbitrary,” when reviewed in the context of the teens’ entire transcripts, I believe I ultimately had to draw a line between “research,” “resource,” and “reliability” no matter how interdependent the relationship. From the hundreds of pages of transcriptions and material artifacts, I include here representative examples of the motifs. I would, however, like to comprehensively include more as I return to the data in the future.

A. Research

Teens had a defined sense of what constitutes “research.” They most closely associated the term with the word “project” that implied a longer deadline, and a written report requiring a set number of materials (“magazine and newspaper articles”, “interviews” or primary sources; “books” but not encyclopedias; and websites that were most often given by the teacher). Key
to the teens’ definition of research was that resources would need cited and would undergo scrutiny by the teacher and even other students. The school library was not mentioned voluntarily as a place where this work was accomplished. (As Student 5 succinctly put it in relationship to “research”: “I mean, I only have to go to the actual library if I REALLY need to. So.”). The classroom (using resources provided by the teacher), at home (using internet), and then lastly the public library were the places the work was accomplished. This confirmed what the initial surveys demonstrated, and what surprised the school librarians upon reviewing the responses. School librarians expressed a much broader view of the term “research” in that anything could be considered research; therein rested the boundary between the two small worlds. When the students were probed, what emerged was a complex, but ordered hierarchy of information tasks from “overnight assignments” to traditional written research reports to more creative pieces (movies, music, posters, plays/skits, presentations). When describing the process of finding information for non-school work, such as for recreation, among peers, work places, or family needs (e.g., searching for in-network chiropractors within an HMO for a parent, using websites to define terms as a medical technician assistant in a doctor’s office, debating evolution with a friend, or consumer purchases) “research” was not associated at all. “Research” was performed under rigid requirements for a specific purpose: satisfying a class need or a achieving a desired grade. Freedom of expression, inquiry, or joy of discovery were far from the experiences of the students. “Research”, not surprisingly, was something you did as part of your “job” as a student and forced, regardless of being allowed to pick a topic. No “research” was described as having a relationship to their lives outside of that particular class for that particular grade. Memory of the content and the process of finding it were vague,
unless it related to the student personally (e.g., one student interviewed his veteran uncle regarding Vietnam, and was impressed by details he hadn’t read in provided sources).

“Research”’s meaning in the students’ larger life was limited, whereas for librarians it was a core aspect of their professional identities.

For example, site librarians crafted a detailed “Research Worksheet” (APPENDIX C) that adapted the BigSix™ numerically ordered steps of information literacy: “Task definition,” (listed twice, broken down into blank boxes to write topic words), “Information seeking strategies,” “Locate and access information,” “Use of information,” and “Synthesis.” The worksheet is described as a “... ‘form’ to help you organize” and that “...if you do your ‘thinking’ first, you will save lots of time and frustration.” Under “Information seeking strategies” are six more boxes of sources, and where those may be found: “Books or Reference Sources”, “Newspapers” “People/Interviews”, “Primary Sources,” “Magazines”, “Websites”. Under “Websites,” types are defined as “Commercial, Personal, Organization, Military, Government, Educational, Other.” It isn’t until step five, “use of information,” are students told, “Thinking about how what you have fits together comes into play at this stage” (emphasis original). The final step is “a new product.... You should not be repeating the facts, but applying them in a new way.” The steps on this formal sheet did not correspond to the students’ surveys, to their descriptions of research in their interviews, or to the year-long study of my son in his own school work.50 The students most often started by brainstorming with teachers (and the resources they specifically

50 The students most often started by brainstorming with teachers, browsing the internet for topics, proceeding to Wikis, and then forming a topic or hypothesis. For example, under “Task definition” students are told to “Write out in this area what you need to discover.” Students’ in this study described and exhibited more the serendipitous model of information behavior (Twidale, et al. 1997), where discovery of what to be discovered still needed discovered.
selected be it books or websites), browsing the internet for topics, proceeding to Wikis, and then to reflect on a hypothesis, and so on. I include how the librarians define research here not as a curriculum study, but illustrative of their own small world defined by “information literacy discourses” that are normative of professional librarian behaviors. The research horizon is limited, contained, and containing; its boundaries firmed and defended against. The teens in the study saw this model as being provided by those outside their own small world and not having first-level value, therefore it was not followed or utilized. The discours of research itself was rejected, not necessarily all of the resources that may be available within the process. No student voluntarily mentioned the worksheet, remembered it accurately when shown it, or recalled (or, at least, with any detail) the class-time workshop in which it was given. But all of the students did describe a process similar to the following student. She interpreted the “Research Worksheet” as follows:

_Student 2: Stanza 1: Research process_

Um, the first is, like
usually the keywords or, like, brainstorming ideas;
The second one, I THINK, is, like,
    um you would go—
you would like, um,
find, like, a broad range of, like, sources
and then, like,
you narrow them down into--like,
ones that, like,
are questionable
you probably wouldn’t use them.
And then, when you have like those, (a lot?) of good sources you have, um, then, like, you would, like, find how it pertains, like, to your topic and, like, if it’s, like, sort of on the edge or, like, it’s really, like, somewhere, like not really pertaining to your topic, but has, like, some, like, little details in it, you’d probably, like, want to use them.
So, you cut down your sources until you, like, have a good set that you want to use.

The process of research itself within the small world of school is so routine, so little questioned, it is one of those “invisible” boundaries of the small world of student discourse.

The tacit nature of it within school is evident. Another student stresses the routinized nature of the research process for school:

Student 5: Stanza 1: Research process

Well, first thing I did
probably, uh,
I tried to brainstorm some ideas
of what I actually wanted to, uh, search for.
And then—maybe even tried to think of a thesis first.
And then, after that, I was like,
alright, well,
try looking for information online.
And then, to make sure I had everything going.
Then, I’ll do the interview.
And then, I just took bits and pieces of each--
and tada, tada, tada.

The paradox of the term “research” as boundary of both the teens and the school
librarians, is that the process itself is linear and limited as prescribed by the information literacy
discourse in handouts, worksheets and class instruction; while at the same time the librarians
view “research” as being almost any search for any information on any topic. The students,
however, in their information lives as students, see “research” as a well-defined specific task,
while seeing the process itself as more fluid and guided by their own discretion.

“Research” was described by all of the teens as distinct from other types of
assignments; often meaning “project.” Following are responses that echoed all of the teens.

Student 2:
If it’s a PROJECT, like,
it’s—
our teacher’s really specific on, like,
“use a lot of sources.”
Or if, like,
if they CALL it a “project”, like,
cuz sometimes they’ll be, like,
“This is a PROJECT”
or “This is just a paper or
this is just an assignment,“
To ME, those are all different classifications.
“Assignment” is maybe 5, 10, 15 points, maybe 20, you know.
They’re gonna look at what you do writing.
And they’re gonna make sure you didn’t copy.
But besides that
They’re not gonna be like goin’ crazy over
what you’re looking at,
but like
as long as it’s FACTUAL, you know
they’re not gonna let you say,
“Uh, 3 plus 2 equals 7“
cuz some guy on a random blog told me it was.
But, um, say if it’s a “project“
then I know it’s going to be worth a lot
and I know that
they really want you to get your sources done
because—and a lot of projects here and basically since
—I’m thinking since middle school,
they didn’t make us do this much in elementary—
you have to teach other parts to your class about it.
So, I don’t want to be responsible for, like, messing all these kids up and be like
“On a test I got this wrong because of YOU.”
So--
On projects and uh,
I usually go out more looking for information and make sure I--
and I’ll double-check,
I’ll be, like,
I’ll make sure I can find the second,
‘cuz, uh, REALLY it’s kinda’ like when you’re doing, uh, the same experiment.
We had to do it a certain amount of times, like three times
So, when I’m looking for information, like,
I—I usually need to see it twice to make sure it’s a logical fact.

The teen above used many clusters to convey his emphasis (on “project”) and to define the granularity of just what “research” meant to him. Every student made these distinctions from such assignments as the “over-nighter” versus a more heavily weighted assignment with more points. Not surprisingly, the students’ definition of successful research was a high score
on the assignment. Perhaps more interesting was giving the appearance of using sources that did not raise red flags with teachers, while also seeking to manage time effectively between required volunteer hours (all teens in the study were required to perform service), activities (all students were members of at least one organized sport, club, or had hobbies), home/family, work, and social life. The above student also raised the social nature of what is “factual” and the responsibility of reviewing a source as part of the research process when needing to share it with peers. Ultimately, he relied first on his own best judgment, employing a scientific model, of what were acceptable resources to teachers and his peer group when “doing a project.” The student’s information behavior in the case of “research” (from “just assignment” to “project”) is guided by his social role as student and teen, and is shaped by what is considered the most appropriate behaviors given the norm of the word “research”. Research, then, becomes wholly the discourse of the young adult in very real and practical terms.

Another view came from the ELIS study in the home. I selected his response to demonstrate an emphasis on a definition that is even more expansive than that of the other students or the school librarians. “Research” in his view is an open-ended and dynamic process, resources used can be biased and not factual if employed as a strategic rhetorical device in argumentation, and is seen as a way to build understanding of a topic. He still adheres to the social information behaviors expected within a school environment, within his small world. He still is quite aware of his behavior needing to undergo third-party scrutiny, and therefore turns secretly (i.e., does not cite) to sources that build his own understanding. He understands that he is truly living an information Life in the Round where behaviors in public are critically assessed and controlled, and therefore any information used that is not valued by the expected
social norms of “student in school” will be kept hidden. At the end of the day, he knows that what he cites needs to be acceptable by authority. He and all of the students choose to comply to the accepted rules of information behavior (evidenced in what to cite or not in “research”). An interesting inversion is that the fewer the sources, the stronger they need to be in even the “over-nighter” assignments. Yet, even he did not see “dredging up facts” as research.

**Teen: Stanza 1: Research**

I think research
-in research you shouldn’t have your conclusion
set in stone
when you begin.

Whereas a one-day assignment basically
you’re just drudging up facts
and convincing the teacher
your facts are true.

A good research assignment,
you kind of have an idea, a hypothesis,
even if it’s, you know,
an English paper or something.

If it’s a ‘research’ paper,
you should have a hypothesis,
but keep your mind open.

And you have to compile sources
over a period of time, you know,
over several days,
and you have to be open
to changing your stance
if the sources don’t really agree
with your preconceived notions.
So, um,
for a research paper
you have to look at
way more sources than you end up citing
just so you can have
a better understanding of the topic.
And um, another thing about a research assignment,
is that not all the sources
you cite have to be perfect.
You know, I,
for a one-day assignment,
I definitely want each one of them to be you know
iron-clad, unbiased.
But for a research paper what various parties
Or, you know,
Like, people or associations say—
even if it’s lies or even if it’s probably untrue or biased?
You know, that PERSPECTIVE can be
just as important as, you know,
as an encyclopedia entry, just as citable.
As long as you talk about
that source’s bias in your paper.
It can enhance your argument.
Enhance a counter argument.
So, the KINDS of sources that, you know,
I would actually cite in a research paper, you know,
it’s a far wider variety
than I’d cite in a one day assignment.

Bibliographies and the work they do to indicate effort is closely tied to the definition of “research.” “Research” is seen as shorthand for “effort expended” in order to achieve a grade, and the bibliography is an understood strategic tool to demonstrate effort. Students may not have used the resources they cite, may not have even retrieved the articles or books or websites included, but it still serves to indicate an attempt. When interviewed later about bibliography construction, many students admitted not actually using all of the sources in their bibliographies, but that they “needed to cite sources.” They used the online library catalogs and websites to search for acceptable citations, and “padded.”

Teen: Stanza 2: Research
As far as a large project goes,
you can’t just use Wikipedia.
I mean, that’s just...
It’s today’s version of Encyclopædia Britannica.
Just like, ah,
kids from earlier generations
have an encyclopedia set along the wall—
so they can take it down,
the encyclopedia and, you know, get their information from there? That’s Wikipedia NOW. It’s lazy and it’s quick, and it might be useful, but it doesn’t show a lot of effort. And that’s— at least at the school level— showing effort is HUGE. You know, at least you TRIED. So that’s another point in the bibliography. At least you TRIED to find information.

The school as representing Chatman’s idea of a Life in the Round just begins to be seen in the above via school assignment expectations of a student operating within a closed, routine, prescribed environment. Hidden to the “other small world” of school librarians is how students view “research,” within the context of the school library. The school library is not a static context, but an interpreted space of actions, practices, and beliefs. The school library is a spatial construct (Savolainen, 2008) in the students’ world view; one that figures less prominently in “research” than the librarians (myself included) would like to admit.

B. Resource

A second motif closely related to “research” is “resource.” What do students use in the course of their information needs relative to school assignments? How do these differ, if they differ, from what is used in their everyday lives? In terms of schooling, students most often
defined “resource” as broad and inclusive—from artwork on the wall to a story from a friend to a location; but one student who was particularly versed in adopting the “discourses of schooling,” described it at first as a narrow, approved list (magazine, newspaper article, book, etc.), only later in the interview when discussing her own information behaviors outside of school did she revisit the term. Students contextualized “resource” within the discourse of “right or wrong,” “good or bad,” “can or can’t,” “use or not use,” and even “restricted” and “blocked.” The relationship to the third motif for analysis, “reliability,” is strongly dependent on the teen’s own authority and discretionary power and connected to locality (school library versus home, for example). I include the school libraries mentioned by the teens as “resource,” because—as a spatial idea and value within the information world views of the students—they were. The school library provided shelter, quiet, excuses (not to be in a certain class), social support, and technology access, if not always the typical “resources” school librarians expected. So, I suppose I take the students’ broad view of “resource”: it can be almost anything.

Student 5: Stanza 1: Resource
Well, I guess it could be as—
I like to think of things as plain and simple.
A resource can be, uh,
anything that can give information.
I mean, cuz a resource—
a resource doesn’t have to be “good.”
I mean, a resource could be
just talking to one of your friends.
I mean, they—
and they say something
that might not be true
but they ARE a resource.
I mean.
Or it could be something
as sophisticated AS a website
or something like that.

Student 3: Stanza 1: Resource
Uh, resource is kinda like a
(pause)
for ME it’s kinda like
where you’re getting your information.
Resource, you know,
some people believe,
it’s just a book, you know,
a book will tell you what you need to know.
Some people believe it can be multiple things.
In my personal opinion,
it could be almost anything.

Student 1: Stanza 1: Resource
(Long pause)
I think...
a resource can be anywhere you can find—
once again—
RELIABLE information, I mean,
it could come from a BOOK, Internet, webpage
um, I mean, (inaudible)
movie, I mean,
anything that can give you information OVERall.
But it has to be, like,
something, you know,
that YOU’RE looking for, obviously
or else it wouldn’t be, you know,
a resource to YOU.
it would just be something THERE.
(inaudible, a joke of some kind)
just THERE.

Stanza 2: Picture as Resource
It could even be a picture off the wall.
I mean,
you could use THIS picture
right now to describe “X”
and every picture holds at least 1000 words.
You could write a whole paper
about THIS.
It’d be HARD,
but you could do it.
So it’s like, I mean,
we can use a picture
and see HOW people are feeling,
who they ARE,
what time period.
I mean,
you could narrow it down
to SO much. I mean,
ANYthing.
You can use ANYthing.

Student 2: Stanza 1: Resource
A “resource”? 
Um...
stuff that HAS facts.
Like--
something that’s, like,
basically--
full of it
and then, like, um,
those facts are pretty much accurate, um,
I guess reliable, things like that.
“Resource” was often broken down by the students into specific sources used, and often described in “good/bad” polarities. The school librarians wrote and distributed a sheet titled “What Makes It Good” (2006) that offered “a checklist to help you determine if what you have in hand is worth the time and effort to read and use.” Authority, objectivity, currency, accuracy, and content and organization were the criteria. Teachers, however, were most noted as having authority to determine “good” from “bad” because they, obviously, held the power to grade. But beyond this, the idea of “good enough” emerged, and these distinctions rested on the contextual nature of “research” and a dynamic definition of “reliability” formed by the teens themselves. There was both a fluidity not conveyed in “checklists,” while at the same time a rigidity when it came to what was considered a “good resource”.

The student below described what resources she was using to complete a history project on Abigail Smith. On one hand, Wikipedia was anathema, but on the other YouTube was lamented for being off-limits in a history project; Yahoo was revered as trustworthy, while Google was sniffed at. Her sense of familiarity and use, experience with the resource, legitimized (despite teacher’s admonitions otherwise). The following student’s uninterrupted multiple speech clusters within the overall motif of “Research” reveal one example of this paradox of the student’s adoption—and abandonment—of “school discourse.”

But it’s not actually something you can use.
So, ‘cuz
I have teachers who tell me
“Do not use Wikipedia,”
“if you do it will not count.”
So, I mean,
we’re not allowed to use it,
so obviously
it can’t be something good.
We’re not allowed to use it.
So, I mean,
we’re not allowed to use it
for homework or anything.
Never looked at it or anything.
I’ve just heard so many bad things.
It’s like,
disregard it.

Stanza 2: Resource, YouTube
Yeah, and another one is YouTube (raising inflection),
(My) U. S. History teacher, yeah,
he told us
we’re not allowed to use YouTube.
And it’s for our final project
where we usually have to have, um,
a visual aid.
So, that’s why we were all like,
“Oh, are you kidding me?
That’s where we get all our visual aids!”
Stanza 3: Resource, Internet

Right now
me and two other partners
we go,
first thing we went on was internet,
cuz, you know,
that’s the first source you go to (lowered voice),
And we research her (Abigail Smith’s) name.

Stanza 4: Resource, Search engine

I trust Yahoo.
And that’s what I go to.
Some other people go to Google,
but I don’t trust that as much.
I research her name (sing song)
and find out information about her.

Stanza 5: Resource, Book

Like, I’ve already read in my history book,
And I’ve read it in another book
that was in our class already
that he told us we could use
Stanza 6: Resource, internet
So then I go to the Internet
and I find out information that I (pause) think I can use.

Stanza 7: Resource, book
First thing (rising), ummm,
if I have a book in the class,
I’ll look in the book.
There’s an index in the back,
THAT’S where I look first.
THAT’S what I do.
If he gives me a book to use in the class,
and he gives me an assignment—or her—
I’ll look in the index,
use the name,
or the person,
or whatever the topic is,
so I know what WE’RE talking about first.

Stanza 7: Resource, internet
And then I’ll go straight to the internet.

Stanza 8: Resource, search engine
Then straight to Yahoo.
Other students attempted to say they used databases as a resource, but it was clear in the interview process they did not. They used the “library language,” but when probed or in the context of their definitions of research and reliability, they eventually let go of the need to convince me they were using “right” resources. Search engines, again, were the first and most used of any “resource.”

**Student 5: Stanza 1: Resource, database**

Uh, well, see the (pause)—
what’s nice about the databases is
when you use em, I mean,
you know, unless you just don’t like
the information they’re giving you—
it’s gonna be credible information.

**Stanza 2: Resource, internet**

I mean, when you go on the Internet,
the first one may look GREAT
and then you go to it,
and you’re, like,
“No, this isn’t it.”
I mean you may go through—
you could find the first one to be right.
It could take you ten to find the correct one.
Stanza 3: Resource, database
So, that’s why databases at the school
give you—a lot.
I guess,
more efficient and consistent
than you (find on?) the internet.
SLC: Uh hmm. And what about um... So, what’s your
favorite database—that you use?

Stanza 4: Resource, search engine
I guess, even though it contradicts what I said,
Google.
Just cuz (clears throat)
For everything in general,
school and like
everything else.

Student 4: Stanza 1: Resource, search engine
Um, usually,
I’ll go to Google.
Just because, like,
I know, like,
I want a reliable source,
but I know I’m not going
to get graded on the sources
that I use, like
if it’s something
out of the box I thought of.

When asked if peer students, in her estimation, were “good students” she answered, not surprisingly, affirmatively. But it was her explanation of how students use Google (or any other resource that is considered “bad” in school) that I found telling. Information literacy has so little to do with any specific resource, yet in school libraries and schools in general the misplaced focus is labeling “illegitimate sources.” I was put in mind of the slogan, “Guns don’t kill people; people kill people.” Perhaps it’s what a teen does with a resource that makes it “dangerous:”

Student 4: Stanza 2: Resource, internet, student use
I’d say
some students are good
and just happen to be able to use Google,
and stuff like that
and get away with it,
but some students who are like
just not as good, like
get lower grades
and are
“Oh, I don’t care.
I’ll just use this website
because it’s right there
and it’s quick and easy,”
or “Who cares if it’s wrong,”
or like “It’s from the internet,” you know.
So it can go either way.
But I do know people
that are good students
that can use places like Google and Wikipedia.
Um, I think it depends
on how they utilize information
and how, like,
they interpret.

Wikipedia represented to the students a resource that was used most often as background, to situate a student’s understanding of an unfamiliar topic, as a tool toward an end, and never, ever to be cited. This resource more than any other becomes an indicator of an insider world of information behavior that exists beside the explicit social norms of the Life in the Round that closely represents the information social network in prisons as described by Chatman. Everyone uses Wikipedia. You just have to pretend you don’t. The irony here is that the teens in this study are astute, ethical, savvy users of information, and yet using Wikipedia is somehow seen as transgressive; perhaps, because it is a resource that does not adhere to traditional ideas of authorship, but in the students’ understanding it usually was called “unreliable” despite their relying on it heavily to build their own meaning making of a subject. Using Wikipedia also was a source of embarrassment because it was seen as “lazy” in “good student” school culture.

it seems like today
a lot of people just
go on the internet to, like,
Wikipedia is, like,
the big thing
just, like,
go on there, and like,
find it.
and then, like,
you don’t really know
who’s writing the stuff,
and, like,
if anyone went on there
and changed it, so.
SLC: So, have you used Wikipedia yourself?
Student: Uh huh. Yes (smile).

There’s some things
that shouldn’t be included
just because they aren’t um—
they don’t look good
in your bibliography, really.
You might have read them,
but you certainly wouldn’t quote them in your paper;
and you definitely wouldn’t
put them in your bibliography.
I’d put Wikipedia at the top of this list just because a lot of teachers don’t like it.

Stanza 2: Resource, Wikipedia, meaning of use
And it kind of says something about a report if Wikipedia is one of your sources.
It basically says ‘Lazy.’
You know, ‘I just hopped on a reckless—punched in, you know, search terms into Wikipedia, and that’s where I got the information from.’
And (pause) teachers really hate to see that.

Stanza 3: Resource, Wikipedia, use hidden
So, even if it was really valuable information, I’d know whoever wrote the Wikipedia article had to have gotten it from somewhere, you know, I just, you know, dig one level deeper and get the original source material if possible.
SLC: So, do you *use* Wikipedia and don’t say it?
Teen: Yes. That’s definitely true.
Another view on Wikipedia, however, was from a student who—because of the social nature of the resource—discovered two relatives in it as he was doing research for two assignments: one on World War II and another on sports history. Both entries verified family stories, adding to his sense of place in history. He was proud that his relatives were “important enough” to have any entry, a validation for him.

**Student 3 Stanza 1: Wikipedia, family identity**

--during D-Day behind enemy lines,
kind of went in on uh Hitler’s
uh you know, (unintelligible)
where he was in the bunker.
Um, one thing that like I’ve used Wikipedia for is you know how everybody
Googles in their last name sometimes?
I Googled (Wikipedia) in my, um,
my mom’s maiden name,
cuz my uncle was in it,
so like he was like
uh there’s a movie and stuff
and he was portrayed in it
and it’s kinda cool
And also cuz my unc- my uncle, like,
he’s my great uncle was in it (Wikipedia),
and my uncle,
my direct uncle
played professional baseball, so it was kinda fun to see that.

Wikipedia was important to this student as a resource. It gave a sense of legitimacy to family folklore, allowing him to cite it as a source of pride: that his extended family uncles were mentioned in it, where they may not have been in, for example, a more traditional source, gave him a sense of legitimate social standing in his view. His idea of reliability seemed sophisticated here: he relied on his own sources of corroborating evidence (family oral history) to determine reliability. Likewise, his own sense of what is illegitimate in Wikipedia was clear (e.g., prior to his discussing his uncles, he talked about when Comedy Central comedian Steven Colbert famously asked the audience to deliberately mass-edit the entry on elephant populations). Again, the source itself isn’t necessarily unreliable. This contrasted with the school librarians and teachers who stated that Wikipedia could not be used at all, that students don’t question it as a source, or critically assess where the information comes from. This student—all of the students—demonstrated that they were very much able to make those distinctions.

While discussing resources used, databases were indeed mentioned with comfort by two of the teens (ProQuest which was at the public library; Groves for art and music; and Opposing Viewpoints for debate and issue papers). Key to their use were the students’ own judicious choice of them in order to be viewed as using a “legitimate” source. They did not necessarily use them as first or second choices, but as necessary for the process of a “project” that required specific types and number of sources. They rarely used them from home, often relied on the public library and librarians for assistance, and—again—only used them when the “had to.”
The idea of “last choice” particularly struck me personally; having been a school librarian, I had not seen the library as a place of last resort. I went out of my way to make it as welcoming and as creative a place as I could. Yet, were “my students,” too, only there because they “had to be?” I won’t know now, but the idea of “school library as resource” became clear in the conversations, observations, and in-home study of my son. The surveys from the Cybraries study were not favorable toward the school libraries in the district. This came as a personal blow to the school librarians—as it would to me if I had the same data. So, I specifically in my own research wanted to find out just where the school library as spatial idea—as idea if not practical use—rested in the students’ experience. The following are teens’ descriptions relative to their own needs and expectations of what a school library “should” be in their real information technology lives. They most often adopted what I call a “language of limitation”: can’ts, don’ts, and rules. At the same time, students also expressed being limited in using the library (access) or not being allowed to use it in certain ways that had meaning to them as high school students (with its own attendant restrictions and responsibilities).

**Student 2: Stanza 1: Resource, School Library**

SLC: So, do you use the, um—how often do you use the school library?

Student:

The school library?

Um, (long pause).

I’m not sure. (Pause).

Like (long pause).
I come in here for like (embarrassed laugh) lunch, when I study.
and stuff. It’s like a quiet environment. (Pause)
Um, I look up some books
that are interesting, um,
here, but, like,
I’m not sure if like
I just COME IN
to do my research papers,
Because I don’t have any, like,
particular projects due.
So, when like
around the end of the semester when like
teachers are giving out projects
I think I’ll be able to use MORE of it, like (Pause)
But, like,
right now it’s not really like (pause)
USEFUL (embarrassed/apologetic laugh).

Student 5: Stanza 1: Resource, School Library
Well, besides the computer,
besides the computers here
we use the CAI lab.
Um, (pause)
I have never checked out a book from this library.
I’m not gonna lie.
I mean, I,
ocasionally one of the librarians will put, um,
a bunch of books on a cart,
just to make it easier for us-
I’ll just look at those.
I might get information from them,
but I have never actually gone here
and checked a book out.

Student 4: Stanza 1: Resource, School Library
I struggled with it (research project) for awhile.
I actually tried going on the internet a few times,
and I emailed my teacher,
and I was like,
“I can not find anything on the like internet, like,
do you have any suggestions?”
And he was like,
“Well, I would go to the librarian
because this is their expertise,
so they can probably help you.”
I didn’t want to give up right away.
I would like go home
and like try the internet,
and couldn’t find anything
and then just give up for that day.
And then I’d go, (unintelligible)
and then eventually I said
“Okay, I need to get the assignment done,
so I guess I’ll GO to the library…”
(laugh)

Student 3: Stanza 1: Resource, School Library
You know, there are some RULES
that ARE like kinda
not so great
that kinda make it,
kinda make it
kinda
you don’t want to BE there (voice inflection up at end which is unusual for him)
sometimes.
Um, take, like there’s a thing
where you don’t get to sit
two people at a table. (pause).
I don’t KNOW, like—
back here it’s three,
but over there it’s two to a table.
And we’re always like,
there’s four chairs at a table,
and we only get to sit two at one. (laugh)
And the bad thing is, like, uh,
we’ll have project,
and when they, uh,
don’t want us to talk loud,
we’ll have four people in a group,
we’ll have two people—
we end up with two people at ANOTHER table
we have to speak kinda LOUD
because everyone else is kinda loud.
And WE’RE not (supposed to be) loud,
so it’s just kinda like, a DISASTER.

Teen: Stanza 1: Resource, School Library
Um, I think the last couple years …
um, we were uh
prevented from going to the library
based on our last name.
So there were two groups, like,
if the last name went from A-P?
Or something like that?
You could only use the library on Tuesdays Thursdays and Fridays.
And if you’re last name was, yeah,
I guess toward the end of the alphabet,
you used it on Mondays, Wednesdays, and Fridays.
(Laugh).
And that was to alleviate the overcrowding problem.
So people had to scan in
in the beginning of a period, um,
and if they got there a second too late
or they had a last name
that wasn’t on the list for that day,
they got turned away.
And that was because so many teachers
were using the library
like any other computer lab.
So their classes could word process
or they could do research.
And it kind of rubbed a lot of us the wrong way,
because if we needed to print something
or if we just had to finish our report,
we always thought the library
should be somewhere where
we could go to DO that.
And towards the end, (of the year)
it wasn’t really as reliable a place as it used to be.
SLC: So, that kind of gets to my question, ‘why go to
the library?’ Why—what function should the school
library serve, and—what do you think it should do for
you?
Teen:
Stanza 1: Resource, School Library

Available technology.
I think that’s what I would have liked, and I think that’s what all my friends would have liked. Just, the library should be a place where we have access to computers, access to databases, and access to printers.

During ANY FREE PERIOD WE HAVE.
You know, libraries should be the failsafe. If you forgot to print out a report, you should be able to bring it in on a flashdrive and print it right there.

If we need, um, a summer, not summer, if we need a, a book to read in English class, because that’s what your reading day is, and you forgot it, the library shouldn’t judge us because we’re rushing in during passing period. They should, you know, reasonably let us check it out, no questions asked,
and get it done.
The library should be a resource
that is available to us
pretty much all the time.
If we respect it
and we don’t, you know
cause trouble,
the library should be open to us.
Most students don’t check out books
out of the library
unless there’s an assignment
right at that minute.
So, technology really IS
the most important part
of the library right now.

Stanza 2: Resource, School Library, technology, librarian:

But, librarians and technology,
the technology happens to be in the library.
So it’s kind of the librarian’s purview, I guess.
The computers. They GUARD the computers.
It’s more—
the librarians are just there
to make sure the technology
is allocated properly.
We don’t have enough computers.
That’s obvious.
If we had more computers,
more computer labs, you know
the teachers wouldn’t necessarily
have to go in the library.
So the librarians oftentimes
make sure students
DON’T use computers for web surfing,
don’t go to forums,
don’t go play games,
don’t,
DON’T waste time, basically.
They want to make sure
the computers are used
for academic purposes
at the times when students
can be in the library.
You know, it’s kind of enforced, the allocation of the technology.
And almost by definition, there isn’t enough technology.
There can never BE enough;
so librarians are there
to kind of make sure
that people have equal access to it.
Whether that means buying a database
or making sure we share the computer,
or building a collection of books,
I know that’s an older technology,
maybe not as relevant now, um.
It’s all the same thing.
It’s making the technology
available to the maximum number of people.

Barriers to use of the library are multiple for even the most library-friendly student.

Time is an issue, not to mention the permissions, passes, and permits required. But another
issue is this idea of “having to” or being “made to” go to the library. This is very different from
the students’ free choice of using the library for their own purposes: studying, meeting friends,
group work, internet use, printing. The paradox is that the library—if it was as accessible as the
cafeteria or lunchroom—would likely have a place in the information life of the students. But
because of the limits put upon access and “right use,” the library is relegated to outsider status
in the information small world of the teens. It seems that to the students’ identity of maturing
into a choice-making young adult, deciding how the library is used is important to its being an
authentic place within the students’ own lived experiences of play, social connection, and
ability to determine work accomplishment given their already-rigidly determined schedules of
school, sports, and work.51

51 The public library, however, was noted favorably by each student, from the types of questions allowed (especially
when it came to pulling articles from databases; public librarians did not judge the teens for not being able to find it
themselves, not allowing enough time to do the research ahead of time, or not having their “password sheets”) to group work
rooms, broader availability of resources, and group work space. The public library branches mentioned by each student are
Restricted Resources

In the course of the study I was disappointed to learn (from the students) the school administrators with the school technologists and librarians decided to block Google (particularly images) and YouTube specifically, and its filters were “set to stun” thereby blocking “legitimate” resources (in health and science) as well. No general announcement was made. Teachers were told to tell their students not to use these resources at the school, and students learned of the banning in the course of trying to use them. Teachers and librarians were still allowed to use both. When I confirmed with the librarians, intellectual freedom as a professional ethic was not raised and I chose not raise it. I inferred from their tone that they themselves were in a difficult position between district-wide decision-makers and angry parents. Blocking, however, was yet another indicator of living in a Life in the Round where monitoring of activity by “inmates” is assumed as necessary.\(^{52}\) The teens were left to conjecture why such core resources to the teens as Google and YouTube were banned. (The teens already knew they were dissuaded from using both for assignments, but to block them? Responses ranged from astonishment or outrage.)

\underline{Student 1: Stanza 1: Resource, Google, blocked}

Uh, one of my friends

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within a first-ranked public library in the nation. More than that, however, is the spatial idea of the public library as “insider” space. The public library-as-resource then, can be seen in Life in the Round theory as “first level”. Students referred to the particular public library branch nearest their homes as “theirs” and “my.” “I LOVE my library!” effused one teen.

\(^{52}\) I did ask the librarian to show me the internal correspondence where the district librarians were debating blocking. She would not describe the precipitating event. In the emails, the high school librarians within the district were deeply divided, ultimately agreeing it was appropriate; the K-6 librarians within the district all agreed upon blocking. I asked for a copy of that email, but was told no.
was trying to go on Google
to get a picture,
that’s the basic place
every teenager will go—Google and Yahoo—
the two main ones I’ve ever heard
anyone ever talk about.
She’s like,
'I tried to go on Google
to get a picture—just a general, like,
baby picture for one of my
child development classes—
couldn’t get it.'
She goes,
'They BLOCKED it.'
And I was like,
'They blocked GOOGLE?'
(Laughter, disbelief)
I was like,
'Where will I get my pictures from?'
'Yeah, me too!'
And I was like,
'Horrible.'
And (pause), um,
the school’s trying to block
out kids from looking at
the WRONG THINGS, you know,
and researching the WRONG THINGS, and--
going towards the wrong things,
and I think that maybe
they (the school) were looking at
trying to find out, like,
what WE were looking at--
And just giving general information
about, you know,
what type of things
we were looking at and things.
Maybe taking their OWN survey--
--you know, um,
finding out, maybe
that we were looking, you know,
that they weren’t BLOCKING the right information,
so they should just BLOCK
the source all together.

Student 5: Stanza 1: Resource, web, blocked
Oh yeah, it’s (YouTube) blocked here.
Like, our school--
I have no idea what’s blocked and unblocked
cuz some people will go see, like,
weird stuff on the sites saying...
Like, for a while they blocked sites
that had, like, perverted words or something, like,
our biology site would block for awhile
because it contained the word ‘tit’ so.
Yeah.
Well, it’s weird,
teachers can use it
but WE can’t.
So, I don’t really get that.
They think, yeah.
I don’t know.
They just want everything blocked.
Like we—
at one point, all we could get to was our school site.
And that’s it. (Pause)
That was only for a short time, though.
So.

Student 4: Stanza 1: Resource, blocking
Yeah, our school has been blocking a lot of things.
They are even blocking Google images now.
Which I think is kind of ridiculous.
Cuz, like,
I guess people COULD be looking at bad stuff,
But, like, I mean,
it’s gonna happen at home like
it’s gonna happen at school.
So, like, what’s the difference?
Like, and, a lot of people
haven’t been able to get
as many things for their projects
like pictures or, like, video clips
because that’s been blocked.
And I personally don’t think
that students were taking advantage
of having those as, like,
a privilege to use,
so I think it was a little bit unfair.

Student 3: Stanza 1: Resource, blocking
And then, uh,
    another thing is,
the computers at this school
they have, you know,
a BLOCKING thing.
On the websites.
Basically, the most USELESS tool
ever created by man.
There’s certain things
that this thing does
that just is INFURIATING.
SLC: Like what?
Student:
Like, we have a biology website.
It’s called Biology.com.
Our teacher gave it to us, you know?
It let’s you use your book online
if you don’t bring it to school.
So, we all love it.
For a MONTH, no,
it was about two weeks,
they BLOCKED it.
Because in a biology section about,
there was a, it’s about the body,
I can go see.
I don’t, like,
I don’t understand why
I’m so blocked off of stuff
that I can very easily obtain.
YouTube’s BLOCKED.
There are multiple websites.
But we also use it (YouTube) for information.
We did a project on deer, the deer population,
and how to control it.
SLC: Yeah, that is one of the common assignments. Biology?

Student: Biology, yeah.

I think one of the things is,

if you were—

if you had to take away—

if you had to get rid of ‘em.

Our group’s was to introduce a predator.

And to SHOW the predator, ‘
cuz there’s pictures,

and pictures don’t do it justice,

we GOT a video showing the animal itself,

it was HUGE.

So, we just wanted to show people, you know,

what it was

because there are some people

who are visual learners.

I had seen this project in the science classes at this school and others as an example of problem-based learning grounded in the real concern of deer overpopulations in the county.

Blocking raises an interesting question about how young adults in science classes are often asked to pose and solve their own inquiries; and then—within the bounds of what the school considers “legitimate”—those inquiries are limited to certain tools. This student may have been able to find a video of a cat to use in his project in the school databases; but he would have had to enter the password to gain access to it during his presentation, making it inconvenient and
time consuming given the slow network and interfaces. It would not have been the best tool to solve the problem. He was able to determine his own best resource given the problem of building understanding for his peers. He pointed out that yes, YouTube can be used unwisely—but that as maturing young adults, that should be their decision and choice.

C. Reliability

Discretionary power, choice making, experience, maturing identities: these are subtle and not-so-subtle aspects of how students defined the third motif, “reliability.” Teen students at first reflected the school discourse of “right and wrong,” but upon reflection, they changed positions. Reliability ultimately rested on their purposes and experience of a tool; and their own authority to determine utility. Yet, the students do exhibit the information literacy behaviors that correspond to the school librarians’ expectations, especially determining what source to use based on accuracy and reliability and when what they find is “good enough.” (“What Makes it Good,” 2006). Students’ sense of what made a resource “reliable” ranged from externally defined (by a teacher or librarian as such and is peppered with “they,” “have to,” “can use”) to self-experience confirmed over time in a range of environments such as at work (e.g., using WebMD at a medical office) or at home. The small world is evidenced by the broader criteria

53 John Dewey’s ideas of instrumentalism neatly describe students’ what and how, where and when of “reliability” in fluid contexts between school and not-school. The teens’ thinking itself is the tool, then, when applied to how they build a seamless cognitive map, moving between states of disharmony and harmony, disunity and unity; all toward resolution, all toward the whole. I can not help myself but asking, “Why do schools (and school libraries)—while professing to educate ‘the whole’ teen toward independent and critical inquiry—in fact ignore the larger lives of teens who live in the community, the world, not just the school?”
used by teens to determine what and how a resource was “reliable,” as well as the idea of bias and neutrality.

**Student 1: Stanza 1: Reliability**

SO, he’ll give us an ADDRESS (PBS website) to go to, and then we know THAT’S reliable, and then— That’s where we have to get ALL our information. When they give you the passwords, I trust ALL information since THEY give it to you, and they say we can use it, And so I TRUST that one (rising). But, if it’s not ON there, like, I DO trust Yahoo— don’t ask me why. My mom trusts it TOO, so I think it’s, like, a FAMILY thing.

**Stanza 2: Reliability, definition**

That you can TRUST it, and that it DOES tell you the CORRECT information that you’re trying to find.
But that is (inaudible) correct.

SLC: And how do you verify that?

Student:

Stanza 3: Reliability, verify
(Pause).
I think it depends on what source you use.
Or...if (soft laugh)
your teacher tells you it’s wrong.
He’ll tell me, ‘Oh, that’s wrong! Oh, hey,’
Because if WE question it,
first person you go to
is not only your parents
is your teacher.
So, and plus,
’cause your parents weren’t the ones
in CLASS with you.
You go to the teacher first. That’s what I do.

Student 4: Stanza 1: Reliability, defined
Like, um,
something that’s legitimate.
Like, something that a person
who knows
what they’re talking about says,
not just someone
who’s giving their opinion
or has a biased opinion about something.
Like it’s someone
who knows the facts
and can deliver them like truthfully.

**Student 2: Stanza 2: Reliability**
Like, if, you find the same, like,
facts, um,

um, then, like,
I would believe that, like,
you know, not like,
(unintelligible)
why would a bazillion people
lie about the same thing?
So.

**SLC: so is Wikipedia reliable? Or—**

**Student 2: Stanza 2: Reliability, Wikipedia**
Um, because, like, (tone changes—confidential, lower)
even my teachers,
even though, like,
it’s sort of ironic,
but even though they’re like
“DON’T use Wikipedia”

they’re, like,

“Oh! I got this definition off of Wikipedia and I like it a lot
so I’m using it here,
but you guys can’t use it, okay?”

Yeah...

So, like,
some of it’s gotta be good,
I guess,
for THEM to use it,
but not for us, though. (Tone is annoyed)

Stanza 2: Reliability, neutrality

I think what’s reliable is
things that aren’t (pause),
like, (pause)
is published by people
that aren’t, um,
interested, in like,
your business or
something like that.
Like things that are just
published because, like,
they want to TELL you about, like,
new things,
but not necessarily
get you to BUY them.
Like, I’m not sure, like,
I want to say something about
‘neutral interests’
or something like that (rising voice)?
that, like, it’s not, um, it’s not, for payment or,
like, it’s not to get you to, like, do something,
like (pause)
NEUTRAL like… (silence, ended point)
SLC: Okay, so (pause) are the databases neutral?
Student:
Um, I think
most of them ARE.
Like, even like, big sources, like
Rec…Recog…Ref. (she struggled to say or remember)
–Sources that like um
that are like big companies, um,
They have, like, bias too,
because like,
some of them you classify as liberal,
some of them you classify as, like, conservative

Student 5: Stanza 2: Reliability
Well, it’s hard to say
what *I* think,
because most the stuff
I was told by my teachers, so—
I think it’s credible
if it’s always—
My teachers always said that
the way to see if a source is credible
is if it doesn’t have like
‘dotcom’ at the end.
It has like ‘dotedu’ or ‘dotgov’
or something like that.
But, I mean,
then again,
not every source that is ‘dotcom’
is like false,
so it’s hard to tell.
I mean, USUALLY
if you do go to a source
and you can like—it’s good.
Let me see how to say this.
It’s like,
it’s good to go to a good educational site,
and maybe it’s something with a ‘dotedu’
and THEN if you want to go to a NEXT source,
with like a ‘dotcom’?
You see it has, like,
just about the same information—
you know it’s good.

The student above recognized the subtle and real differences of what reliability means to him. Yet, he began by answering this question as if his thinking on this was not allowed within the culture of schooling: “It’s hard to say what I think.” There is a juxtaposition of the structure of the sentences: I think,/my teachers always. When describing teachers/authority the teens often used a language of absolutes. When describing their own criteria for navigating reliability—and it is a thoughtful building of experience and evidence that tips the scales of a source toward “reliable,” there is subtlety, nuance, and context. When students were allowed time to explore their own meaning making, a more sophisticated and critical understanding than declarations of either/or, good/bad, right/wrong emerged. In the course of the interviews, it seemed I was asking them questions they had never been asked their thoughts on. For the teens’ small world, then, legitimacy is context-dependent. Information legitimacy is socio-culturally grounded.

Take for instance, the following student who is a medical care technician assistant in a doctor’s office. Her job requires her to meet with patients, take their vital signs, give them that information, and sometimes interpret that (and only that) information to the patients.

**Student 4: Stanza 1: Reliability, worklife**

So, like,
I sometimes go to WebMD,
and look up things
and read about them
just so I can learn,
and like
maybe answer
some people’s questions
that I probably wouldn’t
be sure of.

SLC: Uh hmm. So how did you know about WebMD?

Student:

TV! (laugh)

SLC: Okay, so for, do you ever in the course of work have to find out other information?

Student: Stanza 2: Reliability, need for in workplace

Um, usually I need to know
a few things or two,
about diabetes-related;
the area I work in is endocrinology,
so a lot of diabetics go there
and they’ll ask me like things,
like once I give them their labwork
like if they’re A1C (?)
which is their average blood sugar,
so I like
have to know like
what the range is
and like stuff like that.
SLC: And how did you learn about those?
Student:

Stanza 2: Reliability, legitimizing
WebMD.
And asking the doctors.
Because I know real like
medical people that have like
started it
and I can tell like
by the words they use.
It just seems really professional f
or a public website.

Legitimizing experience is key here: reliability is defined by the community of the
workplace. In the workplace, reliability is whatever works to accurately solve the information
task at hand. Information literacy behaviors were necessarily socially constructed by the
medical community and the need to convey in understandable terms what labs meant to
patients in an endocrinology practice. To my view, the teen was navigating and making
judgments with far more at stake than the constructed world of a school library.

Another aspect of “reliability” that I want to amplify is this idea of self-reliance within
the small world. “Work-arounds” or information behaviors that develop outside of the view of
authority that define legitimate networks, are also clearly evident in a school environment. This
student describes how students operate within the school’s filters. Even if the student is
creating a narrative of this, that the “urban legend” the following student provides exists at all is a marker of student information worlds:

**Student 5: Stanza 1: Reliability, work-arounds**

Yeah, like, uh—
the funny thing is,
I don’t think—
his isn’t a knock out at the library
or anything else,
but I think they
somewhat underestimate us a little bit.
we can, like, like, cuz like,
you know we don’t want
to tell the teachers
“Hey, we know how to get around this”
so, or they’ll pick up on us.

This is an example that I see clearly as defining small worlds. The teens know what they need to do to “get around” to use the sources they need. This mirrors Chatman’s findings in the prison: channels are created and sub-communities defined by skills and connections. His language mirrors quite closely that of a prisoner having her “sources to be connected.”

Interestingly, the small world of the young adult student is less defined by his own technology skills, but more that he knows who among his community that can do it. It is the *information* of knowing to whom to go to get the resource he needs that defines the community. So, this demonstrates a finer granularity: it isn’t that every kid is “a digital native;” rather that the teen
knows who in the network is. It comes down to knowledge that is outside of legitimate channels that defines the small world. The knowledge of how to get around is the resource behind the resource.

A final point that I’d like to share when student-teens were describing what they consider reliable and in what contexts, is that: ultimately, free will and belief in their abilities to decide for themselves what was useful or not, was taken seriously and personally. While all the teens hinted at what it meant in their larger lives to be viewed as somehow lacking or as having inability54, it was one student who boldly blurted:

“You like, you hate to see that, because you know, you want to see people’s horizons, minds expand, you know, gathering information, but if they’re LIMITED as we are sometimes, you just wonder, like, how much is this limitation or restriction is really hurting people?”

54 Cf. “Five Things Today’s Digital Generation Cannot Do (and what you can do to help),” printed out by the school librarian and seen as true to her experience. In a two-columned chart there is a list of “What Students Don’t Do Well” and “What They Do Instead.” “Left to their own, their native abilities are neither effective nor efficient when applied to digital searching.” Teens, apparently “can’t query, choose the “right” database, recognize information when they find it, find better keywords,” or “verify the credibility of information.” Instead they “rush ahead toward an answer, grabbing some of the criteria...enter words or phrases into Google, rush past important information and clues, continue to browse,” and “accept what they find at face value, hoping somewhere in the information there is an answer.” Really? The short article from the Illinois Math and Science Academy’s 21st Century Fluencies features page offended every sense of my experience of teens information sense-making behaviors. But, I also saw it as a tool to harden the small world lines between insider teens and outsider school librarians. The discourse of lack, of lines of justification for a librarian’s own community of practice were sadly telling.
V. EVERYDAY LIFE INFORMATION SEEKING:
LIVING THE HIGH (SCHOOL) LIFE JUNIOR YEAR

In the previous discourse analysis of the Three Rs, the students’ information behaviors were seen being shaped largely by the social norms, standards, and prescriptions of appropriate information behavior that exist to control, contain, and serve the expectation of authority/other within a specific location (school and school library). Expressions of self-identity, autonomous decision-making, and insider-community legitimacy were limited to private view and reinforced their small world. The motifs and their clusters illustrated the existence of what Chatman describes as “information as performance” (Chatman, 1999). There is a very specific role information plays in the information life of a teen-as-student: to adapt to the outsider’s/authority’s view in order to produce within a specific environment of expectation. The shared world view of “student” within the schooling environment forces the students to adapt to its social control; however, what of the teen-as-insider in his own “folkways” in everyday choice-making? At this point I not so much shift away from discourse analysis as stand back again to examine context; to understand the ecology of teen information behavior. In particular, I turn to the detailed contemporaneous field notes of and by a teen at home to amplify the afore-stated motifs. The ELIS study deepened and confirmed my understanding of why there is such a disconnect between the expected “right” information behaviors of the school as a Life in the Round and a teen’s larger sociocultural information life.

Living with a teen and having only one home computer that we shared, I already had a sense of my son’s info-life. Upon beginning the formal study, however, categorization fell into the following areas ordered by what was (over the course of the school year) opened in order
upon his arrival home: “Work,” “School work,” (for him in the home, because he created his own online business in junior high school), and “Entertainment/Recreation,” (in which I include his music management). Not all of his information behaviors necessarily fell neatly into one category or the other, especially his online business because it was borne of a hobby, but he chose to see it as joyful employment, and therefore agreed on my categorization. Always, without fail, he toggled between work, play, school simultaneously. He rarely IM-ed and usually only as a way to work on a group project; and in those contexts his friends and he would exchange links, jests, and laments over deadlines, assignments, or specific teachers. His social life was represented online in forums with various (here-to-fore unknown to me) identities. These most often related to his business (two successful online Lego stores he created based on refurbishing and reselling collectible sets). A typical day was him arriving home from school, logging in to check email for PayPal receipts of accounts receivable; logging into his online stores in BrickLink and Ebay to check inventory; plugging in his (then new!) Zune (because he shunned iPods as “too popular”) to manage music; then logging into the school’s Blackboard courseware and teacher webpages to check grades, open readings, and do assignments. Information searches were conducted late, after Lego business was conducted, and to directly satisfy the needs of the assignment for a specific wanted grade. He carefully calculated what score was needed for each assignment to maintain his own minimum standard of an “A.” Most

55 These businesses allowed him to earn enough to donate to the rebuilding of his uncle’s church in Cotagaita, Bolivia, buy his first car, and was—in large part—a determining factor in his getting accepted on scholarship to his university. This directly relates to teen entrepreneurs in internet ventures being spurred by a passionate interest coupled with ICT literacies at a unique period in the history of young adulthood (Livingstone, 2008). Ultimately, a good argument can be made for better understanding teen ICT entrepreneurial practices because of workforce implications.
of his time was spent managing his inventory (determining markets, buying, taking photos, selling, managing income) and homework.56

Vignette: November 2: Multi-tasking via multiple identities.

Figure 1: Screenshot, November 2: His business activities

56 A note on how I present this chapter: after much reflection, I decided to include the field notes and analysis as they were created in their original format, where I had selected screen shots and wrote reflections. I consider these material artifacts and my son reviewed them. I won’t include the full year’s worth of screenshots, notes, questions, and (no small amount of) despairing field entries, but I believe at least some of the value in viewing the field notes is that these were ultimately approved by my son. He wrote some of the notes and clarified my false inferences; since much of the work was gathered after he left the computer. (I conducted what sometimes felt to be an archeological excavation after a tribe has moved on and left its smoldering fires, “Hmmm….he seems to have spent a long time on the Shakira fan site….”). My goal is to amplify, extend, bring into view what we in libraries do not see; in particular, how does the teen’s at-home info-life relate to the school library? I readily admit right now that I was in no small way both impressed and dismayed by turns at my son’s decisions, choices, how he spent his time and with what sites, sources, and tools. At the time this study was conducted, he was readying to dive into the melee of his college early-decision process and did not yet know where he would end up. Now that he is in his first choice Ivy League school, I can say, “Ah ha! See! It didn’t cost him anything that he spent inefficient hours surfing!” But at the time, I was not necessarily confident. My tone is reflected in many of my field notes. Overall, I believe my methodology and time spent with my son reviewing “our” field notes, bring—in his words—“added value” to the larger picture of a teen in everyday life; and the year now, in retrospect, has been warmly woven into our family narrative. He and I will never forget it.
Figure 1 is a screenshot of my son’s computer, taken on November 2. He had left the window open from the night before, when he had been adding inventory to his online store, looking at a Bolivian holiday in the previous tab for our coming trip to Bolivia, had other windows open to email (ignored those from both parents), and has his identity "Oldsmobile" noted in the business fee email from his store. He was clearly working. Here, we have teen not as fast food employee or grocery bagger, but entrepreneur: as producer, not consumer. He has started posting to a new board for "Black Friday" (BF) in anticipation of the day. Unlike those on the board whom are adults, or seem to be, he is a teen who is tracking--scanning the environment--to understand what goods will be "hot" in the market. He looks forward each year to this day in order to buy inventory for his online store. He never has failed to make a profit. I was never even aware of this forum, or this online community even existing. I thought of his interest in BF as something unique to him. Now it is clear thousands are deeply attached to this day. The difference may be that those in the forum post as consumers; he lurks as a way to gather information on potential markets (what to buy; what is popular; which stores will likely have the best sales). This is an information stream directly related to his role as producer: not in the stereotypical "artistic" way, but in the role of capitalist.

"A new (internet) forum began to appear in open windows this month at nearly addictive rates: ‘BF. ’

"‘BF?’ What's that?” I asked.

"Black Friday, Mom!"

Duh. I should have known. He uses Black Friday to stock his online store: tracking Lego set values as avidly as a stockbroker (see Figure 2). He had sold and saved all year to reinvest, and now the day after Thanksgiving was approaching. He already used eBay and Bricklink to
identify profit potentials of sets. But what tool did he use to know which stores to "hit?" The BF Forum, of course.

Figure 2: November 26, Screenshot of eBay; selling Legos as part of his business. Note “Handouts” tab for homework lurks behind

In the age of the WWW and online community, I didn’t question the collector forums in which he lurked and occasionally posted. For every interest there is a seeming community "out there." But his obsession with Black Friday was, to me, something unique to him. I thought he was the only one charting stores, tracking sales, and mapping his anticipated expenditures: all online. Then he shared that the BF Forums are extremely active: from parents to regular bargain hunters, to collectors/sellers like himself. Scanning the BF Forum, I was stunned: hundreds and hundreds of postings listed retailers' "door buster" deals. I asked him if he posted: "No. No need to. I just learn where the sales are so we can go where we need to go." A high school friend of his also scouts the BF Forum to chart his post-Thanksgiving course (he ended up getting a new Zune).
That Thanksgiving night, he reviewed the BF Forums; used Mapquest to locate malls and stores by typing in the store name or mall name; and presented the possibilities to his dad (and driver for the day). Because my son doesn’t drive yet, he had no clear sense of where these places were, so the final itinerary had to be negotiated: downtown was a no-go zone. Far-flung northern suburbs were approved. Western suburbs nixed for traffic concerns. By 4 a.m. on Black Friday, my son clutched print-out maps, online coupons from store websites, and a list of stores with the Lego sets to purchase.

Heading out that morning into the cold dark, he was psyched in a way a younger child may be for Christmas.

When he arrived home, seven stores and 8 hours later, he claimed "victory." His only work that night: upload two items to his store.

In fact, after school today (after the Thanksgiving break) his first action was to post another set to his eBay account (a second business location he uses because "The sets are selling at least $5 more ").

"Mom? Where's the camera?" He snapped a picture of his set, uploaded the image with a new gallery tool he found within eBay ("Cool! It's free!"), researched the price point and shipping costs, and joined the so-many others with identities such as "ToyMom1957". Done. Let the bidding begin. Interestingly, today is "Cyber Monday," one of the newly emerging traditional shopping days to purchase items online in order for delivery by Christmas.

Analysis

What I see here is an example of complex literacies in functional use. We see not only a teen consumer in the traditional, and limiting, sense. (For instance, his friend who purchased a
Zune at bargain prices on BF is the more common view of teens' purchasing behavior after surfing for the best prices. He has entered this capitalist world as a "producer" in a practical meaning of the word. He does not blog or create digital art, which is what we academics tend to see as "cultural production" in digital environments. He enters the marketplace in a literal sense and for a practical reason: to earn income. He uses his information communication technology (ICT) literacies as tools to actively participate as creator in economic cultural production.

As other teens in the junior year of high school, earning money is a key topic of conversation. Teens at work demonstrate a host of sophisticated literacies. For example, a bagger must make critical decisions to prioritize tasks while balancing his own sense of ethics. My son demonstrates similar sophistication: balancing time needed for homework in the school year to maintain his GPA with his young adult desire for income. He has said, "This gives me independence: from you and Dad and from having to be at a job when I'm buried with homework." And it's this, I think, that lends shape to lived information literacy experiences: emotional, intellectual, and financial independence. At a time when teen employment is at its lowest since 1965 (see Bureau of Labor Statistics, 2005)

http://www.bls.gov/news.release/youth.t01.htm), he represents those teens who work in the shadow economy, a pattern not uncommon among young adults. Babysitting, mowing lawns, shoveling snow, selling candy on corners or door to door as in times past: each of these represent an underground economy traditionally driven by youth labor. Solidly middle class, he
doesn’t need to work. Income, then, represents growing independent identity in the maturing teen. In fact, having and holding a job becomes a hallmark of adulthood.

BF, then, becomes a day of empowerment; a day that draws on many, if not all, of his ICTL skills and understanding. And the costs are far more real and of consequence than a missed point on a quiz or a stern look from a librarian during a Big Six lecture.

I asked, "So, what do you think that (BF) has to do with school and school library?"

"Nothing. Not a thing. This is real."

Vignette: Dec 5: Selling as Social Networking; Another Identity; and the School Library

He has been busily watching the "markets" for his Lego sets, and has had brisk business by his standards. Last night as we watched TV, he emerged from the study with three boxes, packing labels he created, and a box cutter. "More sales!" he pronounced, and set to work building boxes to ship off the merchandise. He had purchased these items on BF, and already he has seen a 100-150% profit. His research includes Lego forums to identify sets that are salable in the secondary market; typically to collectors. But, as evidenced last week, he also posts to the ordinary eBay site to sell items when there is a "bull" market. One Forum I didn’t know about is the Eurobrick Forum. Posters/membership is decided by level, and in the forum below, most are at "Vassal." As I explored the Forum, I noted he was logged in as "Voltio." Here was yet another identity he has created that I did not know about. He deliberately does not input personal information that is identifiable: he does not want contacted via email or IM (which he does not use, because he has said it wastes time). He does not send personal messages via the message boards. He posts to forums only rarely (this one, for instance is at 13) and 46% of his postings are in "Within the Deathstar: The TIE Army Forum." All posts are about
Star Wars Lego sets: what's hot ("Motorized walking AT-AT Sold out!"), what's coming out ("Rumored sets for 2008"), what's being retired, and FYI posts ("A funny and silly stop motion animation.") While this is a hobby interest for him, he says the forums are the places to find out market trends. And market trends mean money.

"Voltio" and the small purple icon with red eyes that he has adopted as his identity likes reggeaton, cycling, and mathematics: an essential distillation of his world: music, some athleticism/activity, and school. It assumed Legos is his interest; and he keeps silent on his marketing of Legos to collectors. He has said that they are viewed with disdain by many in the online Lego community (and yet, he treads a cautious line between being "collector" and "seller.") Having different identities allows him to navigate between these worlds.

**Analysis**

These are the kinds of identities that are adopted for a purposeful reason: access to information he needs to identify market trends and price points. Yet, there is a social aspect he may never admit or even think about. If I were to ask him, "Do you use social networking?" He'd laugh. Because the idea of "social networking" has been defined as "FaceBook" and "MySpace". The public discourse has been framed as an activity that is firmly in the realm of "friends." eBay and BrickLink and EuroBrick are social networking, as well: popularity is based on ratings of trustworthiness in business transactions. He can look at his 100% rating and know he is well regarded in this world. He bounces between forums and his business daily. But if you asked him if he spends his time online "socially" he'd never see it.

This is one of the "shadow" aspects of information behavior that surveys or observation outside of the home can not necessarily capture. I suspect we are, once again, trapped by the
discourses we use to define behavior: what is "social networking?" When does work become play? And isn't social networking redundant in the lived information literacy experiences of A?

If I were to analyze his behavior in the light of the new AASL learning standards, even the current ICTL standards as they are written by the ISBE, he would exhibit all forms: ability to identify an information need, ability to frame the question by using appropriate search terms, ability to select an information tool (in this case, forum which acts as a database), select and then apply that information, create (in this case a "sale" of the three sets he had to price, create an online description for, and for which he was building boxes to then mail out today). And ethically use the tools available to him: he is meticulous about the service he provides: clean merchandise in complete sets, timely in all transactions, posting favorable feedback for purchasers when appropriate. When at his school last week, I mentioned to his AP Microeconomics teacher he had a budding online business. His teacher had no idea of this aspect of his student's life. The connection of class content ("Yes, it's all about supply and demand," the teacher said) to the real world for A is one that is direct and immediate. A chose the class because he had an already strong interest in this area; the class reinforces what his own experience has taught him.

And so the school library grows more and more remote to his universe. Last week at the Parent-teacher conference, I had to wait between meetings. As my husband and I wandered in the field house filled with folder chairs, tables, and the hum of parents and teachers, I noticed the "School Library" table set up in the middle of the gym. One man sat, reading. I approached the table and there were pamphlets, bookmarks, and a sheet with a table of 17 databases with usernames and passwords. "Hello!" he cheerfully welcomed me to his small and silent island.
"Are you the librarian?" "Yes!" and, with much enthusiasm, shared his story. He had been in the English department until last year, when he applied and was given the job of "Librarian." Sure enough, there he was listed on the library staff list. "Oh, so the previous librarian isn't here?" I knew much of the history of the library: had attended district technology meetings when evaluating the school's integration of visualization software, bioinformatics databases, digital history libraries, and tablet computers across the curriculum. I knew the role the previous librarian had played in keeping the library involved in the district conversations regarding technology; knew her savvy leadership had literally built a new library with curved banks of computers and a well-used media lab in the library. I had given her data on tablet computer use (gathered by Dr. Harnisch) for her own understanding of technology impact in the school. "Yes. No. she's not: she retired." I felt some sense of disappointment. Although she was not necessarily a "warm" person, she was a tough leader who put the library front and center when it came to technology. She had an MLS and it was because of her the new library was created, connecting a main artery of the high school traffic flow to the cafeteria so that kids at lunch could come in during their only free-choice time. Now, she was gone. "Do you have your MLS?" I asked. "No, but I've thought about it. My coming from the English department, I use the library all the time with my students!" "How about your media endorsement?" "Actually, no. I talked with a librarian at (Dune Grove East) high school, and they suggested to get the administration endorsement. So I have that." The librarian had been replaced with an administrator. "So, tell me, what is the library doing with information literacy?" I asked. "Oh, well, of course reading is so important! We promote YALSA and "Banned Books" week; and outstanding books for the college bound, and..." he went on about how reading is a key part of
the curriculum and how he is promoting purchases of more current young adult fiction. "So, what model of information literacy do you use?" He froze. My husband braced himself, knowing it was a bit of an unfair question. "Well, we got it from Dune Grove East." My husband dropped his head. From the librarian's answer, it was clear he did not know what "information literacy" was; that a "model" was something from a neighboring school; and that the library's thrust was that of free reading for teens. ("Free" reading is a relative term at the school. The collection does need updating, having seen the free choice paperbacks on the spinners and observed the books my son once dropped from his backpack last year: a dusty book yellowed and musty. If free reading is to be the library's emphasis, it does not seem to be taking into account teens actual behaviors and needs. In fact, my son just came home last week complaining that they've changed the "rules" and you now need to have a pass and sign in. When he went and was asked to sign in and show an ID, he turned around and left. When I asked why, he said "I felt harassed. It was like I didn't belong there." He also said they've locked the door (a quick check of the library pamphlet show these are not new rules, but they are now being enforced) from the cafeteria to the library to prevent students from coming in at lunch. "You have to walk around to the hall entrance on the other side, and there's not enough time to go to the library when you've only got 20 minutes at lunch. Why have the door there at all?"

The very students who would use the library like my son are being turned "off" by the "rules." I asked if I could take a list of the databases, and he said, "Oh, sure! But all the kids have those already. We handed them out at the beginning of the year in English." Little did he know what had actually become of those sheets: long discarded or folded into textbooks never to be used. The library pamphlet had staff, a list of materials, a short list of Dewey classifications on
subjects. A blurb about the library system of which the school is a member. The most text was on circulation policies, fines, overdues, lost materials, and limits.

The bell rang in the field house indicating parents needed to switch to the next appointed teacher. I thanked the librarian and moved on. "Limits" best defines what the school library represents to my son. Passwords. Usernames. Signing in. IDs. Print limits. Checkout limits. Time limits. Internet limits.

Juxtapose the school library experience with that of the Forums. Juxtapose the information expertise needed for entrepreneurship versus feeling like a someone who needs watched, monitored, and controlled.

Lived information literacy experience is an expression of freedom; a creative act of resistance and identity building.

The sad part of this is that the school library is pushing itself away from having any role in his life.

Vignette: Dec. 5 Selling as social networking: anatomy of a conversation

His posts began after he found sets that he could sell for 100% profit. He posted to the Eurobricks Forum beginning at 1:10 a.m. last night after homework. He then kept the conversation going overnight while he slept, and posted before school today before we had to leave. Note the levels: he is a "vassal" the lowest of the low, then there is "Fellow" "Knight" and then a "Global mod." He didn't enter the conversation until he saw his own information contradicted that which was posted. He was chastised in a friendly way by a higher level member, a "Fellow," and then he posted information evidence to support. The "Fellow" then admitted she was wrong. Of note is she addressed his ICTL skill ("refreshing a browser") which
is a low level skill. He seems to have responded swiftly and with evidence. The insider/outsider status was upset here: my son, who has less status in this forum based on fewer postings, actually gained status by the end; to put it in words he would use, the Fellow who dissed him got "served."

**Analysis**

This type of social networking exemplifies another "literacy": the ability to read the social landscape where the politics of a forum are negotiated mirror those information literacy skills used by the students when choosing what tool to answer what assignment. It mirrors the same subtle expertise needed in "reading the institution" to succeed in a self-identified and self-prioritized "task."
Homework mingles with his business and hobby daily. Figure 3 indicates a picture of use in the evening hours. Immediately after school, it was gaming "Star Wars: Empire at War" where, so the box says, "you are the supreme galactic commander." Gaming offers a natural outlet after the school day, where students are not "commanders."

Then, he plunged into U.S. History, English, and ended with Calculus. He checked his online business sales while at the computer. But a majority of his homework was spent offline in his room working the physical textbooks and worksheets.

By the end of the night, it was all online business work. Figure 4 is a screenshot showing his management of one of his online selling outlets. This account is negotiated under her
father’s name, as the legal adult. He adopts his name, his email, and then manages the business side of it. 57

Figure 4: December 14: Ebay business takes more time as Christmas nears, more time spent away from homework

Before verifying his sales, he followed up on a tip from the Forums Dec. 5 regarding Target having a coupon to use to buy Legos for resale.

57 I did have a conversation about the legality of using his father’s name when it was his business. He told me that the age restriction was arbitrary and he felt it was restrictive. He shrugged off information ethics questions, saying he felt he was being honest, had a perfect rating as a business, and that no one really knows or is hurt by not knowing. He had thought it through sufficiently to his own standard. To him, it was a necessary action in order to do business in an adult world. Like the other students, then, he created a “work around” to get done what needed done.
Analysis

Note the use of search terms and stages of "information literacy" used in what I call "instrumental databases." These instrumental databases (eBay and BrickLink) are directly relevant to his defined needs. In this case, there is a convergence of work and play: business and hobby. Analysis of the search process in these two indicate all levels of information literacy as defined by current standards. But from what he has described as his experience with the school and its library, these behaviors do not seem to have been “taught and braught”, but are generative by the need in the moment.

So, what constitutes "legitimate" sources that inspire action on his part; and what criteria of experience has he used to determine legitimacy?

Meanwhile, he also was watching a product he's put into his other "store" on the hobby website. He had to click through three pages to find his product he posted, a lego ferrari. My question to him is why he chose to look at these two "extra" particular ending pages, when it seems to me he was searching for his own posting relative to the other products. I asked him and here is his response:

“Um, I noticed that one of the sets was very expensive compared to the others. Even though it appeared to be the same. So I clicked on it and wanted to see if the seller's other items were similarly overpriced. It was just curiosity at that point.”

So those two were sold by the same person?

“No. Wait a minute. Yes.” (He looked to make sure) “…and it was overpriced.”

Why does it matter if something is overpriced? What does it matter to you?
“Well, I noticed that the seller for that had completed a large number of transactions based on their feedback rating. And it surprised me that they were able to sell so many sets for an apparently inflated prices relative to the market.”

I asked then why it mattered, again.

“Well, in microeconomics, one of my classes, we talked about how in the competitive market goods that are priced above the market price cannot sell. So it suggested to me that the Lego market is not perfectly competitive. And I realized that that made perfect sense, actually. Since in a perfectly competitive market they have extensive information about the market and what are buying; and what the prevailing market price is. But if someone did not know how to use Bricklink or eBay they might not know much about how much Legos are worth. That is what I was thinking about.

Like the 10 sets I sold this week: I sold them on eBay because they were commanding a $5 premium; over the Bricklink price. If buyers had known what the Bricklink price was, they would not have purchased my eBay items; or at least not have bid as high.”

Meanwhile, he’s still doing homework: an English report on Al Gore’s “An Inconvenient Truth” and fielded a call from a classmate who needed help in Spanish. Oh, and also doing his calculus. He checked his teacher’s online webpage and looked at the calendar for assignments due and "daily notes". This morning, I found next to his breakfast dishes a calculus worksheet he had completed and was apparently studying. He had to get to school at 7 a.m. today for a math meeting to take a test for the continental math league. (He did not tell me this; he said it was for "extra credit" and it is. He defines it as he sees its value: as extra credit, not a competition. This mirrors how teens in my research group adopt personal discourses based on personal significance, not necessarily that which the teacher or the librarian --or the parent, for that matter-- would necessarily view it.)

*Vignette: December 14: SCORE!*

Today he walked in the door pumped: "Yes! Another sale during History class!"
Earlier in the week I had retrieved an email from him somehow sent during the school day. Knowing he did not have time to go to the library, it became clear he had sent my "reminder" email from a class. Later I learned it was from history, where he uses the tablet pcs daily. The parent and librarian in me came out: when I pointed out that he shouldn't be using the school networks for non-school use, he scoffed. "Everyone does it! They play games, check email, I mean, it's what you do." He already shared that his history teacher never uses the tablets to access the library databases; that he instead pre-loads articles to the iShare courseware the school uses or points them to direct URLs. In fact, the history teacher uses the free archived articles through American Heritage magazine rather than J-Stor or American Heritage in the full-access library databases.

Today, though, it's all about another sale he could use to boost his mood on a cold Friday. Business is booming at this time of year. He is already scoping cars in the paper "autofocus" newspaper. "If I sell enough in my business I can get this" he says as he slides a picture of a Cadillac DTS with 22s.

Right now, he builds boxes to ship off inventory to Canada. He still relies on me to drive him to the Post Office.

That DTS has to wait until he takes Driver's Ed.

Vignette: January 14: Finals? What finals?

Despite it being finals, he finds time to engage in his business/play. Here is another identity of his in BrickLink (see Figure 5). He raced up to the study after school because a Lego element, a Princess Leah head came in, and he now can sell the whole mini-figure for nearly 30x its cost. He did this before anything else.
Vignette: January 14: Post-finals, Profits, and Impatience

He has finished taken his exams this week, and is now immersed in NON school activities. He scheduled his volunteer hours at the library to overload this four-day weekend, so he can meet the NHS requirements by the February date. He had scheduled these back in December, anticipating having more free time.

Meanwhile, he is immersed in the post-deal Lego sorting. The purchase of a bin of valuable Legos has given him ample things to do: he is sorting and cleaning all Legos ("Mom do we have any more big zip locks?") in order to identify if he has a full set of the "Star Destroyer". In this process (over 3000 bricks, in this one section of the set), he needed to identify a part that he wasn't sure about: he did not know the shape or what the piece looked like. But he knew something was missing. This Saturday morning (he volunteers later) he's working on
sorting. From his work sorting in the family room (the room is a sea of Legos), he raced up the stairs to the study, tapped furiously on the keys, and then raced back down saying "Great!"

"What happened?"

"I had to find a piece for this set, and the site had it. It was awesome, 'cuz it's a hard piece to find. Now I know what it is."

BrickLink once again has come to his rescue. Over the years, this site has been his "go-to” resource when trying to build collectible sets. Created by a hobbiest it is the largest digital repository of directions and piece guide. It is a hobby digital library of Legos (I would love to do a study of this culture because it is the largest global hobby I’ve seen that is so dependent in very practical terms on the digital.)

"Now I know what piece I need to get to have complete the set."

"So, how much do you think you'll be able to sell it for?"

"I'm going to post it for $400.00" He paid $100 for the whole bin of what no doubt appeared to the novice fellow student as not worth much. At a time when boys feel they've outgrown "toys", he is able to see opportunity.

"When do you plan on selling it?"

"After it goes out of production."

Which is about two years away.

He’ll be in college.

Somewhere.

I hope.

When is he doing his homework?
Later...

He is checking these forums all day, and they run open on the computer as he comes into the study to use this Vista machine HP with quad processor. He just now wanted to check online again, and was annoyed I was here. He said, "Fine, I'll use the laptop." Which is slow and annoying because of poor processing speed. When I asked him what he wanted to check, he wouldn't say and said, "Nothing! Just leave it OPEN!" (Meaning Eurobricks and BrickLink, the two windows open.)

The one key issue doing this research is that sometimes it's annoying for him. I ask questions when he just wants to do what he wants get done. I slow him down. So, I have to respect his boundaries and back off. It's a delicate and challenging balance. While he knows that I gather screen shots, and he does review every notebook that he wants. I think he feels simply annoyed by the process. He doesn't mind so much being "watched." What he seems to be feeling is claustrophobic. I'm trying to do research on a teen boy at a time in his own development that wants to be free, have more space. I am in that space he is self-defining: and my questions invade that space. I think teens and the resources they use are a way of self-defining: of creating for themselves that "space." He has since come back up, frustrated by having to use the laptop. I need to go; I have to share the only strong computer that can open some of the PDFs he needs in BrickLink.

Not all is play and hobby and work. He actually is doing significant schoolwork, this time, an Honors Physics project.

The first window open is a physics assignment he titled "Tiger Woods Problem" as his document. He apparently was given an assignment for which he felt he needed to search for
sources to contextualize the problem. He first looked up "basketball shot newtons" in Yahoo, the default browser. He scanned up to the second page of hits, up to 20.

He then modified his search term to "basketball shot newtons force," taking the suggestion from the intelligent search help from Yahoo: "do you mean basketball shot newton's force?" It appears he examined the first three pages of results using these terms, up to the 30th hit.

He seems to have used basketball to contextualize golf. In physics, sports are often used to explain concepts. It may be that he used a common sport (basketball) to better understand Newton's force as it applies to the assigned problem. At one point sometime after 10:30 p.m., he had asked his dad to throw a basketball as if he were throwing a free shot, and he had a tape measure in hand. It was a mystery at the time why that was needed. From this assignment, I don't see the basketball connection, so I'll need to ask him what he was doing here. Never-the-less, much can be noted about the information needed for a homework task here. Informal, contextual, emergent: sources were his dad, his own experimentation, his own contextualizing of the problem by searching for "like" problems; and use of direct data sources to understand the problem in order to solve it. In an email to his physics partner, he attached his work. They were going to meet at the library after school to do further work. (Note: he and his group received an “A”).

What he turned in (including the sources he used and how he cited them) follows:

Problem Four: The Force of Tiger Woods’ Swing

According to

http://online.wsj.com/article/SB118738593220301320.html?mod=googlenews_wsj,
Tiger Woods can drive a 45.93 gram (http://www.britannica.com/eb/article-222245/golf) golf ball 330 yards (in the horizontal direction). The ball’s initial velocity is approximately 200 miles per hour. According to http://www.sonicboomgolf.com/sample_launch_data.php, Tiger Woods’ launch angle is 11 degrees. Given that the impact time between the golf club and the ball is .0010 sec, how much force does Tiger Woods exert on the ball to achieve this distance? How long is the ball in the air?

Conversions:

330 yards x 3 feet/yard x 12 in/foot x 2.54 cm/in x 1 meter/100 cm = 302 meters
200 miles/hour x 1 hour/60 min x 1 min/60 sec x 5280 ft/mile x 12 in/foot x 2.54 cm/in x 1 meter/100 cm = 89.4 m/s
Angle=11 degrees, \(c=\text{Vo}=89.4 \text{ m/s} \quad a=\text{Voy} \quad b=\text{Vox}\)
\(\text{Voy}=89.4\text{m/s sin 11 degrees}= 17.1\text{m/s vertically} \)
\(\text{Vox}=89.4 \text{ m/s cos 11 degrees}=87.8\text{m/s horizontally} \)
TNEOMS
\(\text{Vx 87.8m/s} \quad \text{Vy} \quad \)
\(\text{Vox 87.8m/s} \quad \text{Voy 17.1 m/s} \quad)
\(\text{ax 0.0 m/s}\quad \text{ay -9.8 m/s^2} \quad \Delta T \quad \Delta T^2 \quad \)
\(\Delta x 302 \text{ meters} \quad \Delta y \quad \)
\(\Delta x=\text{Vox} \Delta T + .5ax \Delta T^2 \quad \)
302m=87.8m/s * \(\Delta T \quad \)
302m/87.8m/s= \(\Delta T=3.44 \text{ sec} \quad \)

Force exerted on an object=mass x \(\Delta v/ \Delta T \quad \)
\(F=m \\Delta v/ \Delta T \quad \)
\(F=.04593\text{kg x 89.4 m/s/.0010s}=4110\text{N at an angle of 11 degrees to the horizontal} \quad \)

Vignette: January 10: Physics as Collaborative Process

"Mom?" My son had a problem that he couldn't put into words. "Could you come up here?" It was late, just about 10:30 at night.
I was thrilled to be asked a question. Maybe it was a complex information question: how to find the perfect resource, maybe something requiring my use of the University databases? Whatever it was: I was happy that he even asked. Since junior in high school, he asks for help less and less.

"How do I do this?" he showed me a video he had of "Cannonball Run" the 1976 movie classic with flying cars and spectacular crashes. "I want to take an image from here and put it on my report, and I want to crop it."

The physics project (called "Cinema Physics") was one he'd been working on--at least thinking about--since the holiday break. He had asked me to reserve the movie in my Blockbuster queue so that it would arrive in time for the return of school. It arrived during break, but he didn't watch the movie until this week, they're first week back.

I saw he had the footage running on YouTube and I hit play until I got to an image I thought he may want (a speedometer). "Is this a good one?" I asked. "No, actually. No, don't worry about that. I know what I want, but I need to know how to get it." He decided what image out of the full clip would illustrate his point best; not me, who had little familiarity with the movie or with his physics argument. With two keystrokes I showed him how to do a screen capture (see Figure 6). We don't own fancy publishing software. But we do have OneNote bundled, and I realized that he could edit, arrange text, and cite with one stroke if used it. So, I opened a new tab, and started a page. Pasted it. That was it. That was the extent of my IT help.

"Thanks, Mom. That's all I needed."
Indeed. When I woke up this morning, he had titled his tab "Physics Project." He had copy/pasted more images for his report and then titled that tab "YouTube." He had arranged his text, edited images, and then copy and pasted it all over to the final "Cinema Report."

The "Physics Project" tab he created and in which I'm now writing is actually his. He and I share this one: he captured his own data, and I am analyzing it. I believe it can represent how students can engage in the study of their own ICTL. Allen reads and corrects all of my field notes and data shots.

The group uses email to share work files between them: particularly drafts. They met at the public library two times this week (Tuesday night and Thursday night), "camped out by the computers." The library provided space where they could write, spread out, and meet in "neutral" territory and appropriate for their own work style. When asked why they don't meet in homes, he said, "One of the guys didn't have a ride, and he was at the library already. That's where he spends most of his time." (I want to make clear that methodologically and ethically: I do NOT open any emails in my son's account. I am looking at patterns of use as they pertain to
everyday life ICTLs.) The screenshot shows that prior to the night before the project was due, they did not exchange content or drafts. These are all honors students juggling many priorities, and to them, it does not seem "last minute" to push the draft out the door in the night. In fact, my son was up until past 3 a.m. (at least that is the last timestamp on the document) working on assembling the physical project piece. When I woke up and came into the study this morning, there was debris all over and there was only 1 sheet of paper left in the printer. (He smiled a bit sheepishly when he reviews the room after school. Part of my physic project stuck to my history book, by the way" he was reading history as his project dried.

**Analysis**

One genre of story among librarians is how the students procrastinate, and by procrastinating, don't use the fully available resources in the library because it takes time. And by not using the databases, lose the opportunity to build complex ICTLs. I suggest that the students are indeed engaging in complexity thinking, and that the tools used match the problems posed and discovered. This physics assignment is a detailed anatomy of a student teen's own ICTLs.

I also believe that students do procrastinate: but this does not necessarily reflect poor study happens (planning). Teens define their schedules as part of a "just in time" strategy. In workplace studies, a tool or a technology is not learned until the need arises. The movie was selected before break; reserved early; meetings were held; and online resources used in drafting the report.

The final report (see above "Cinema Report") used non-library materials to solve complex problems, and the use of YouTube actually posed new ones. In this case, my son wrote
there was a "cool complication" when going back and forth with his classmates online as they worked on the project: (see "Can David Carradine’s Mustang make the jump?"). He learned by observing the YouTube images slowly, pausing on multiple frames, what image they needed to select to calculate the height of the bridge. They also used the YouTube clip (of the movie) to measure the angle of liftoff. YouTube allowed for the raw material from which to make calculations. They likely would not have made these had they been watching the movie, and then remembering it as they wrote their project. The immediacy and access to the material while problem solving closely resembles a laboratory experience.

Key to their use of YouTube too, is how the resource was available to all three of the collaborating students at the same time at the same time of night. When using the DVD, they couldn't schedule time to all watch it at the same time. Nor could they be at their computers and carefully freeze images as they mutually worked in their respective home work spaces. They could work together until the wee hours to get it done, mirroring the adult world of work closely. The following is "the initial proposal to the guys" from his notes “Can David Carradine’s Mustang Make the Jump? A picture of the problem solving he and the group wrestled with follows:

"We first must answer whether or not the Boss had enough power to leave the edge of the bridge at 120mph (the speedometer reading). Power=work/time. We can time how long David’s Mustang took to reach the end of the bridge. The work done is his kinetic energy when leaving the bridge plus the work of lifting his ’stang up the height of the ramp.

Cool Complication: We don’t know how high the freeway is (It’s the Harbor Freeway in LA, but I don’t know how high it is), but another car flies off the bridge at the top going 70 mph. That car takes four seconds (not exact; need stopwatch) to fall to the ground and explode. We can use TNEOMs to find the height of the bridge. So, once we’ve proven that the Mustang has enough power to reach the top of the bridge at 120mph, we have to show that it can make the
jump. We can use still frames to measure the angle of liftoff, but the
distance horizontally may not be possible. We can *estimate* it using
car lengths (e.g., four Mustangs long). We can factor in air
resistance for our final concept using the spreadsheet method.

\[ v = v_0 + a \Delta t \]

I followed up on how the teacher received their work. The project earned an “A.”

**Vignette: January 27: History**

Tonight, I noticed his history ClassServer page open. Along with his Zune and a
document for an address for another item he sold on his online store. He plays now at the
other computer (because I was on this one writing these notes): Worms Armageddon. He can't
play his usual Star Wars Empire at War, because the old computer can't handle the graphics. As
I looked at his history page, I noticed the history teacher had pre-selected resources to put on
the class page. But NONE of them were from the library. Even though he links to such resources
as "American Heritage," etc.

"These links are from *months* ago. They don't update it all the time. Right now we're
studying, let me think about this, the Industrial Revolution. They're old material. Yeah." (said as
he did not take his eyes from his Worms Armageddon game; did not move. He answered in
response to my question "So, what are these resources?"

"We never use the library in that class."

Yet, when I look at the online databases for history resources, the school library has a
rich array, of course: J-Stor, EBSCO, and AP Resources.

The above were listed in the database "Advanced Placement Source" (see Figure 7).

I just had to ask him while he was right here at the other computer playing. The
following are his responses"
Do you ever remember using any of these in any of your AP classes so far?

“No.”

Do you remember using any databases at all, the library in any of your AP classes?

“No.”

Do you remember a teacher mentioning them?

“No.

We don't do that, really. No.”

He has received only 5s on his AP exams thus far taken under the College Boards.

It seems, he is doing fine without these.

And his teachers are, apparently, able to successfully support students without using--or perhaps even knowing about--these resources as well.

So. What does that mean for the school library? I am feeling a certain pain.
Vignette: February 6: Let it snow

It's been snowing! And with snow comes snow days. And after snow days comes the hope of more snow and snow days.

Last night, he stayed up to check the school website for possible snow alerts. He watched WGN weather page. He is also managing his eBay account, buying new inventory. He spends most of his time managing items, following up on leaving feedback, and managing messages.

All the while, reading an article from his history class server page. This time, the teacher scanned and uploaded the whole article: apparently from a course packet he had (three-hole punched; see Figure 8) I don't know for certain if the teacher has received copyright approval,
but it does not appear to have any full citation. I suspect he simply scanned and uploaded it for his students.

This brings to mind the idea of information use, in particular, copyright. Students on the surveys and in interviews seem to understand and can describe plagiarism. They seem to be able to also know they must cite a source. When teachers do not, therein is the same double standard that students discussed when they were banned from using Google and YouTube.

Figure 8: His history teacher uploads material to the school’s courseware. There appears to be no copyright statement.

*Vignette: February 11: Traditional research assignment, English: and a “Re-do?”*

He was lamenting the new BMW crossover vehicle design. "It doesn't make sense: to go backward and use design principles that are already failed," he said. "Look: I'll show you." he
spent time searching for old "Card and Driver" and "Automobile" magazines. He checked both magazine piles (the magazine rack is in need of weeding, I admit). He didn't find it. He almost gave up. Then he searched using Yahoo, and there was the image of the BMW vehicle. "I found it!" he shouted down to his dad. We gathered around the computer screen as he pointed out design flaws. This kid has spent his life studying car design. His first outing as an 8-week old was to the Chicago Auto Show. I credit his long commutes with me to the University of Chicago Lab Schools and sitting on the Stevenson "expressway" for his memorizing/cataloging car design. His memory for a fender or tail light astonished us. His little 6-year old voice would ring out with names, makes, and models of cars as I sought to make an interminable drive palatable. Now, as a teen on the cusp of taking driver's ed, he is even more car conscious. "See, look at this! It's awful! Design is dead in Germany."

But...as I looked, I saw something else: a paper with an uncharacteristic "RE-DO!" written by a teacher. Allen? Redo?

"What's this?" I said. The parent, not the researcher, taking control of my attention.

"Oh. Nothing." Allen grabbed it and tossed it behind the computer monitor. Its soft "swish" against the back of the wall telling me all I needed. "Everyone had to do it over." That may or may not be true. What *is* true is that he does not like English. He does well. But he thinks it's tedious. This is the class that "makes us go to the library." In fact, it is in English that the school librarian (who does not hold an MLS, and in fact is getting his Type 75, not the Type 10 media endorsement; the one who is a former English faculty member; the one who did not understand my question during Parent Teacher Conferences about 'information literacy') makes an effort to be relevant. But at what cost do we "force" library research?
I recall this past fall, early in the term his English teacher asked the students to do a poetry unit where they had to use a very specific database. They spent one day with a "tour de databases," in the school library. Later, that weekend, he tried to access the database from home. It was nightmarish: the school database in which information about the poet was only available onsite at school. He was explicitly told he had to use that database for his assignment. Even though he had found other resources (I had recommended poets.org). Because the assignment required use of the database, I took him to the public library. Unfortunately, the public library restricts its databases to village library card holders. Our card is for another library. I asked the reference librarian for help. She let me login using a "general" number, and it was made clear to me that this was a one-time favor. Now, I had to find the database within these databases in the Gale Virtual Reference. I'm a librarian, and I found myself having to take time to locate it. Allen watched over my shoulder as I drilled in. Then, when we found the required database, I had him sit down and 'drive.' The librarian in me wanted to teach him how to search. Unfortunately, neither he nor I had spent much time (or, in my, case, at all) using the product. Now, through keywords on author, he was eventually able to find his poet. From there, he searched for the poem. On the side bar there were other links (one, I want to point out, was to the biography on poets.org). He emailed these links to his email account. The research process took about two hours. Meanwhile, I pointed out that the physical reference section had his poet, had the biographical information, and had poems. He did not use them because the assignment included language that required this one database.

Now, I am put in mind of the current English assignment. This is considered a research assignment for the year. All students must demonstrate they are able to propose, research, and
write a "Research Paper." His assignment closely mimics the history research paper the site school students discuss. On the "Research Article Proposal" paper returned to him, his teacher said, "Why now? Why you? Slight. Redo PLEASE." Looking at this assignment, I see it is, indeed, short. He sites two resources that are valuable for his argument. He did not include any database articles. These are websites he searched, and are good sources. (Chicago Tribune article; Insurance Institute for Highway Safety). He clearly does not have much of a connection with this assignment. While he did try to connect it with his passion (cars), he doesn't drive yet. Why do automated ticketing systems matter? Clearly, he is fulfilling the assignment. (I am put in mind of Gross's imposed query work, here.) There is little interest.\footnote{I acknowledge there entered into my field notes a tone of dismay. I do want to be clear, however, I am not finding fault with the teacher or the assignment. I acknowledge that, perhaps, I am disappointed in his own disinterest.}

Meanwhile, open on the same page is something that could intrigue:

He was, as he was rewriting his assignment last night, also looking at a spy case in China. Open in a second tab was his "EasyBib" for the article citation for his paper. Before these, he had logged into his eBay account and managed his feedback, and had 14 items he was researching. His search of these items is specific: putting in the Lego model number and one keyword of the item. He does not browse often. He is specifically searching for sets based on when he learns from his online community postings

Oh, and he was also doing his physics problems.

Typical night.
**Vignette: February 20: Colleges Colleges Everywhere....**

"Look at that! Aren't you overwhelmed??" I asked, shocked at the number of daily college email marketing (see Figure 9).

"No. I just don't really care," he said.

It's true. All of them are left unopened. He carefully cherry picks his way through relevant email from fellow students for homework, or emails from his BrickLink order or eBay account. But college information? "I really don't care."

![Figure 9: Overwhelmed by college recruitment marketing emails, most are ignored](image)

**Vignette: February 26: Snow? Again?**

An unusual school year: two days they've closed school due to snow. Last night as yet another system was predicted for an overnight accumulation of up to 9 inches in our county, he began slowing down in his homework. All critical work done, and with some level of hope, he
slowed to watch a movie with us and then the weather. They were calling for the snow to be heaviest by 2 a.m. Damn. Too early. If only the snow system would hit at 6 a.m., then school wouldn't have time to clear the drives, lots, and the village wouldn't be able to clear streets. He went to bed, disappointed. This morning, after he left, I turned here to the study to keep working. On the desktop the window to our local news and school closings page was up. This morning, before he left, he did check, no doubt with that same optimism all children have when it snows. Discovered his school, like so many others, was (TODAY) OPEN. He then unplugged his Zune, the necessary accoutrement for the battle day ahead, and left.

Last month when the school closed, he checked the school home page directly. They post early in the morning if they decided to close. We also have a phone tree, and last time the phone rang repeatedly at 5:30 a.m. This time, he used the local weather station we most use here at home for reliable weather. His selection of the particular weather site is directly tied to family habit. (My habit, actually. I grew up watching WGN weather: from Harry Volkman to now Tom Skilling. Chicago + weather = WGN in my head. So, too, does it to my son.) I noted, however, that our now default search engine on the home computer has been changed to Google (it used to be Yahoo.). I know Google is my personal favorite. And I have shown Allen the different search engines, from visual searches to meta, but frankly, I turn to Google most often because I most often find what I want using the search strategies I know. It seems my "habit" may be his now.

Interestingly, he already knew the WGN URL, but used Google anyway. Typically I do this so it corrects any of my numerous typing errors, and takes the one click more. It's also much easier to type into the search box than the cluttered URL bar up at the top of the browser. I also
can find the specific page under the umbrella page by adding additional terms. He did not do this, however.

However he found it, he did find it. And in time to get to school in the snow.

Figure 10: School closing list from a favorite family news source

Vignette: March 10: Capitalism

As he progresses on this long English project, I weekly find new pieces of his information literacy journey. Today as I sat down at the keys, amongst his email box filled with emails from eBay (yet another one of his sets sold); another window open with three tabs (his PayPal account where he tracked another sale); his BrickLink store where he tracks another sale made (once he receives payment in his PayPal, he then goes back to the BrickLink store to give the buyer positive feedback: it's an intricate electronic dance, where one's reputation has high market value.
There has been research on teen's social network: his social capital in a world dictated by number of friends. But what I'm seeing is a world where social networks is, indeed, just business. Social "capital" is a literalization of "capital."

*Vignette: April 22: College Madness*

It's relentless. Overwhelming. The information streams are tidal waves.

Email advertising became so aggressive, he abandoned his former account. Below is a shot of the "LFD" (left for dead) account, which he now only occasionally checks. He has input his new account with the College Board, so he's getting updates there for his pending ACTs this week and SATs in May (see Figure 11). He knows how to read these subject lines: greetings, congrats, and veiled threats to "get back to me by the end of the day." These remain unopened. Note: he actually opened one that was flagged, and the subject line has schools at which he is applying. And he--wonders!--actually opened one from his mom.
Figure 11: How he determines which emails to open college emails and parents’

Vignette: May 22: Taking it to the streets?

As he is making more money with his online business, and as he is now in his second week of drivers education, he is now shifting his online shopping to... CARS! He uses eBay, of course. This is where he has one of his businesses and where he buys inventory. The car in Figure 12 is actually one year newer than his grandpa's car, but looks just like the Buick Riviera that was one he has admired for years. That car had since been taken away to the great scrapper in the sky, but he still talks about that Riviera with fondness. His strong relationship with his grandpa and his childhood years there with my parents drives, I think, his considering it being his first car. (Then again, he also likes the Olds Aurora and Cadillac Fleetwoods. Big, retro, 80s-early 90s cars.)
Figure 12: V-8 or V-6 older cars represent a part of his identity, as a maturing consumer and driver

Vignette: May 28: Finals

He stayed up late again, his physics exam looming. An English project due. I dropped him off at school late, at his request. And discovered SWAT team and police around the school. "Oh yeah. The bomb threat." After the recent shooting at a local university that left students and a professor dead, there have been a rash of copycat scares. We were alerted yesterday via phone and email by the school that they are investigating such a threat, but that classes were being held. Physics exams. Bomb threats. Just another day at school...

Meanwhile, I came home and logged on here in his study. He was working on an English assignment this morning. The printer churning out pages of what I didn't know. But now I do: he was given an assignment to bring in an article. It was required to be from the databases.
Over the course of the year it's clear he knows how and when to use the database. It is only used in English and only when required explicitly by the teacher.

From these windows he apparently had to create a brochure. He downloaded a trial version of Publisher, which we did not have. He got an image using Google search. And content from the databases. Meanwhile, he was surfing for cars: he did, after all, just take his drivers license permit test.

He didn't even save the brochure he created. I have a hard copy front of me. He did read the book. He then quoted from the article he found in the database. Then he dropped in the images. He dropped in a bunch of articles from the database. He did this, literally, in less than an hour.

What disturbs me as a teacher, one who thinks she educates, is that this assignment is strikingly like those I created for my graduate children's literature class, where they need to create a bibliography for library patrons. And there was no thought required, or at least, not much. *What did I think I was teaching?*
Vignette: November 16 Spanish as recreation

He left the screen in Figure 13 open on the desktop, at the same time he had been playing Star Wars last night. He is in the process of translating reading this in his Spanish class. I don't know how this relates, or if it does, directly to any assignment. He does love Spanish, and this may have been something he was curious about, inspired by his own interests. There were no documents saved, or windows open to SharePoint to indicate a direct connection.

Wiki, as other teens have stated, contextualizes content and allows the student to build individual understanding of the unfamiliar, despite it not being seen by the information literacy curriculum as a "legitimate" source. "Legitimate" is thoroughly a contextual negotiation. One student in my interviews said she "never" uses a wiki, hadn't even seen it. I had some doubt about her honesty: that she may have been trying to present to me what she thought an "ideal"
student is (perhaps one who uses the library for all information needs). Other students said they use wiki all the time; and it was these other students who seem to have a more sophisticated and nuanced understanding of what information discourses to use and when; what sources to use and when for a specific social effect.

His use of the wiki here seems most closely related to play than distinct homework need. This kind of work-play is indicative of what he does: his work/play when at the computer is less clearly defined. When he is working in a physical paper environment, he is less inclined to "play" (more so to fall asleep over a dull passage after midnight). When on the computer, he intersperses moments of gaming and curiosity--delight, even--that mimics the patterns one may have at work to catch a YouTube at the office or play poker or Mah-Jong (as I noticed a colleague doing in a recent business meeting of my own just this week).

_Vignette: November 15: Recreation: Gaming: A Day in a Life_

Last night, he had come home and immediately dove into homework in his study. Textbooks scattered in a half-moon around him, feet shuffling distractedly in discarded graded worksheets and loose-leaf notes. He was still making up work from his missed sick day. Later that evening, after dinner and closer to midnight than the dinner hour, I popped my head into this study. He was listening to the Latin reggaeton station on my old "boom box" from the 1980s that he somehow thinks is so "retro cool." Meanwhile, his fingers danced to the rhythm of weapons fire as he played _Star Wars: Empire at War_. Fixated, he directed military craft for air strikes on bases and--frankly--undecipherable targets. I don't understand the game, and I make it a point to learn games so I can converse and understand what is popular. _Runescape_: no worries. _LineRider_: love it. But the intricate rules of play for this game seem like "work" to me.
We finally have a computer that can handle gaming, and he loves it. He easily spends hours playing. When I saw this game, I bought it, thinking he may like it. I had no idea how much.

"I never told you guys, but the reason I didn't want to play any computer games before was because they kept crashing." All these years when he was young, I kept thinking he just "didn't like that kind of play." I even, as a parent, gloated a bit to my slightly anti-establishment, off-the-grid friends that "Oh, no. my son doesn't do those games. He likes other imaginative play." When in fact, it was because Freddie the Fish (a popular problem solving game for children ages 6-10) would cause the screen to go to black. How frustrating it must have been for him, mid-game staring at a black screen and hearing faint, incidental "Freddie" bubble music?

As a boy of his generation, there was a boy code. In years past, you played sports to have a common ground with guys. In more recent years, it has increasingly become gaming. If you're a guy, you game. You sit, thumbs poised, and play. Hours. We didn't have money for any of those kinds of things, so he didn't "get" those kinds of toys. He didn't ask, I didn't press it. But as the years passed, I saw he didn't have a whole vocabulary--a vast language--the other boys had. At the time, I thought I was striking a blow against the marketing of violence to children. As I learned more about gaming as an academic, and the valuable role of dramatic play in technological environments, I questioned my earlier, simplistic parental assumptions. Would my son somehow be outside his own generation--be anti-establishment--because of my not buying Xbox? Have I somehow failed to give him digital--in the most literal sense--literacies?
Watching him play at what I would call work, watching his tall, long body leaning forward and his immersion in this other world, fingers flying, I don't think I've "failed." It appears he's made up for those lost years.

As I turned to leave, however, I note that the battles he fights in this other world are against the "Rebels."

**Vignette: December 9: Weekend**

No homework screens were opened this weekend yet. Typically, he does homework on Sundays. Today he began his volunteer shifts at the library for National Honors Society. He learned about the volunteer opportunity through social networks (parent, me; and a librarian friend of mine who knew he may be available). He is very comfortable in the public library, and has run Lego workshops for the middle schoolers there. Today, it’s just chillaxing and the Latin and reggaeton music that he prefers and which helps sustain his constructed and emergent masculine Latino identity (see Figure 14).
Oh, and another online identity has been formed to sell off his childhood Hot Wheels sets (see Figure 15). His online identities are market driven. Like Legos, his forging of young adulthood teeters between favorite childhood activities (like Hot Wheels and Legos) and the emergent behaviors of a contributing adult. Most of the sites require you to be 18. He, well, isn’t. In fact he skipped a grade so is younger than his classmates. He navigates this by using his dad’s email and credit/bank cards to establish the online PayPal accounts.
Figure 15: Screenshot of site where Hotwheels are sold and another online identity emerges

The teen at home confirmed, sometimes painfully, just how outside the information lives school libraries are. He earned straight-As at a top school in the state, passed his AP Exams with the highest scores possible, got into the Ivy League of his choice, and earned more money in the year than even I did. His information life as entrepreneur actually was a key part of getting into his college of choice with a scholarship and honors. He used what was “banned,” avoided what was urged, and...well, did well. So what does this mean?
VI. REFLECTIONS AND CONCLUSIONS

When I reviewed the data from the teen’s year in his home in the context of the teens at the school site, I grew convinced that what I observed at home was close to what the students at school described of their everyday lives. The discussions of what, where, why, how, and who clustered and converged for me. The teens I studied, as members of their families, as friends, as volunteers, as workers, as athletes, as students—as active, contributing members in their communities—negotiated their maturing identities in their information worlds in strikingly similar ways. Their information lives seemed less informed by their school libraries than by classroom resources, teachers, and tools of preference based on familiarity, access, and efficiency.

Since this is speculative research, I have less firm conclusions than suggestions for lines of inquiry. I do believe I have demonstrated the following:

(1) High school students and librarians use different "information literacy discourses" within the formal schooling environment, from definitions of information tasks and resources to what resources and technologies to use to accomplish those tasks. These discourses are expressions of their positions within the small worlds (Chatman, 1999) in which the teens and librarians negotiate.

(2) High school students' informal information seeking is consistent with everyday life information seeking research (ELIS, Savolainen, 2005). However, in “formal” information tasks such as those for a school assignment (described as "imposed queries" by Gross, 2004), school librarians' understandings of what makes students information “literate” are restrictive, focusing on issues of legitimacy. Ultimately, this may have implications
for teaching and learning of information literacy within formal school environments, and may encourage a new emphasis on student information experience. In particular, it may invite school librarians, educators, and administrators to rethink current pedagogies to include more collaborative approaches that directly address unnecessary imbalances in power relationships.

(3) Evidenced by the teens’ descriptions of how they made information choices at school and in the home, the data confirmed that teens’ decisions—how they came to use or not use a source in a particular way for a particular purpose—were consciously made with the awareness of when these may be seen as illegitimate by school authority. Most striking was the confidence and success teens expressed when they exercised their agency when facing a school-based information task outside of the school environment.

(4) Not unexpectedly, teens’ small world information behavior formed within the parameters of the Life in the Round that they found themselves in at school; and, not surprisingly, teen information autonomy was most exercised outside of school. It was clear to me that school is one Life in the Round in which teens find themselves, and we as school librarians, quite possibly, contribute to its rigidity. The aberrations of Life in the Round and small worlds are less necessary when there is freedom of choice-making.

It’s tempting to confuse a Life in the Round with a community that shares information practices, but the differences are clear. Small worlds develop when there are conditions of control that define a Life in the Round. Based on the above, it may be fair to ask: Aren’t we all, at one point or another, living in small worlds? Perhaps, but we don’t all operate within a Life in the Round; not always and not in all circumstances.
A. Towards a Pragmatic Pedagogy

What we are really discussing, then, is less about standards and achievement, tools and technologies, than about competing theories of knowledge. Of the choices available, is there one toward which we can move without compromising either the teens’ everyday information seeking or the librarians’ professional role? The needed epistemological shift does not have to lack practicality. Leaders of John Dewey’s Laboratory School at the University of Chicago, formed in the 1890s, were wrestling with the implications of a new industrial age of production. In Dewey’s view, the goal of the school—and its use of technology specifically—was to collaboratively create a type of environment in which learners could engage in reflection on their place in that new world order, not merely by adapting to new tools-du-jour, but by framing authentic questions about technology’s problems and possibilities in a changing world (Tanner, 1997). In the 25th chapter of Democracy and Education, called “Theories of Knowledge,” Dewey discusses the epistemological shift his school desired in terms of continuity versus dualism. Dualisms emerge when barriers are maintained between people, or subject-matters, or curricular aims, or (to apply it to the current context), when behaviors in one setting are artificially distinguished from behaviors in another setting, or when certain forms of intelligence are held to be better than other forms, often because of different social groups or classes that employ each type. Continuity, on the other hand, is maintained when progressively complex understandings emerge (through the “reorganization of experience”) as learners experiment and engage within a community of learners (Dewey, 1916/2004). On this account, for schools to achieve their goal of creating lifelong learners who can contribute meaningfully
to their community, they may need to develop a pragmatic, rather than prescriptive, approach to how they shape students’ information-seeking behaviors.

I conducted a final follow-up interview at the end of my son’s participation using the same guiding questions I had earlier used with the students (see Appendix A). Many answers corroborated those given by the other teens’. One, however, seemed to urgently echo the expressions of the other teens in the study. He said, with emphasis, in a conversation about using resources: “Information is not our limiting factor, research is not the limiting factor.” He stressed that what was important was how he created meaning from it, solved a problem, and how that use affected his own world. As a person with authentic successful experiences outside of school, he believed strongly in the value of his own discretionary powers to determine the right use. He and the other students returned to this idea numerous times: while their ways of finding solutions were often the very ones not seen as legitimate, the end results were often accepted or even praised.

I am reminded again of Dewey’s idea of legitimizing experience as being a necessary condition of education: “In schools those under instruction are too customarily looked upon as acquiring knowledge as theoretical spectators....” (Dewey, 1916, p. 134). The teens’ individual experiences, when taken together, represent a collective experience of how schooling is a Life in the Round, where their ways of knowing and operating constitute a small world (self-legitimized by experience). Dewey defines meaningful experiences as those that are both continuous with previous experiences and involving interaction with the social, physical, and information environment. In this study, each teen—including my son in his at-home reflections—pointed out that information can be anything at all within the small world of teen
information behavior—so long as it is useful. No matter the source, information was useful if it was deemed so by the user; any incidental information encounter—a cautionary tale told by friend, a picture hanging on a wall, a shared book, an opinionated website, an oral history from an uncle about a war—was in their eyes “legitimate,” so long as the teen made meaning from it within the context of a given community, even when the source or the situation in which it was encountered was unorthodox from the standpoint of the school librarian. The social, situated, and emergent construction of legitimacy experienced by the teens correlates to Dewey’s idea of educative experiences, and, I would suggest, also point to Chatman’s ideas of social control and autonomy. What’s more, the teens’ information behaviors indicated a clear understanding of the lines between the small world of the school and library and their larger lives outside of it. Based on this, I hypothesize that where students have agency and autonomy to make information choices, there is less opportunity for a bounded Life in the Round to develop; where information access and legitimacy are not controlled by an authority (perceived, perhaps, as arbitrary), small worlds are less likely to emerge; and gaps in understanding between teacher, librarian, and teen may potentially narrow.

As the line between cultural production and consumption in digital environments becomes increasingly porous at the beginning of the 21st century, there is the potential to redefine traditional hegemonies, whereby teens negotiate multiple and sometimes-conflicting information and technology discourses. Indigenous discourses (Gee, 1999) are the deftly employed “tools” that the teens used successfully outside of school and that reveal the small world in which they operated while in school. No matter the tool or technology, the ways that teens solved problems (and posed new questions) is less about “information literacy” as
traditionally defined than what some scholars are calling “computational thinking”: “It is planning, learning, and scheduling in the presence of uncertainty. It is search, search, search—resulting in a list of webpages, a strategy for winning a game, or a counterexample. Computational thinking is thinking about ways to use massive amounts of data effectively” (Wing, 2005). How closely does this echo information literacy? At the national levels such organizations as the National Science Foundation, working with the International Society for Technology in Education, recognize the need for an expansion of computational thinking in K-12 schools (Barr et al., 2011). While I am not, here, arguing for more standards by which to measure students, I suggest allowing for multiple, concurrent paths for solving problems. What can be seen in the research presented in this thesis is just this type of iterative thinking process that allows for error, but which embraces tools and approaches that pragmatically and efficiently solves not just a single problem, but, potentially many problems. The “legitimacy” of the tool or process is irrelevant, particularly in everyday life information behaviors. There is a noticeable shift toward “technological ecumenism” (or perhaps “agnosticism”) by the teens that the librarians do not demonstrate, at least not in their official roles within the school environment.

B. The Learning Community as Knowledge Community

As school librarians, we don’t need to contribute to the conditions where small worlds develop. Small worlds do not have to emerge when there are opportunities for information empowerment, open channels that are critiqued rather than illegitimated, and an acknowledgement of increasingly responsible choice-making by teens. I suggest that by using
ELIS research models to elucidate our information behaviors (that is, those of librarians and learners alike), we more closely approximate Dewey’s notion of a learning community, including additional factors identified by more recent theorists:

The focus is on the process of learning, rather than on mastering isolated skills. According to Harste (1994), it is an interactive curriculum wherein prior knowledge is valued and new perspectives are sought. Learning is viewed as a social experience, with opportunities for cooperative problem solving. Students communicate with other students and with their teachers about their learning tasks and about new ideas. They also interact with other staff members in the school and with resource people in the community, enhancing their curriculum studies with information that extends beyond the classroom (Oberg, 1999).

(Harrada et al, 2002)

By critically examining what we mean when we say “information literate”, we naturally consider the socio-cultural assumptions of who determines what is valid knowledge. For this reason, there can be a sense of risk in critiquing the closely held professional role of the school library as information literacy standard bearer. Yet, to collaboratively participate in creating a learning community, we must critique our assumptions about information literacy. I believe Chip Bruce elegantly states in “In Closing: What is Literacy in the Information Age?” “...literacy...encompasses a way of knowing in the world” (Bruce, 2003). All we need is to willingly, perhaps vulnerably, ask ourselves how we come to know what we “know”.

C. ELIS as Method in School Libraries

Based on the research reported here, I believe that ELIS, when used as participatory action research at the local level of the school and its library, has the potential to empower librarians to take their own information behaviors into account when setting expectations for their students. Conducting an ELIS study offers the school librarian flexibility—along with the
accountability so necessary in today’s school climate of data driven decision making—to construct an information literacy learning community. The qualitative data of information behaviors in everyday life that can be empirically gleaned from students, teachers, and librarians as members of the school community can offer a depth of insight that standardized testing instruments may neglect or discard as “invalid.”

While this may sound like a gargantuan task at a time when school librarians are already hard-pressed, an ELIS study can be conducted through a fairly low impact “day in the life” self-collection of participants’ information choices throughout the day, in and out of school. The picture that emerges would show more precisely the kinds of information behaviors that make the typical school-bound roles of student-teacher-librarian permeable. Information empowerment in everyday life, as evidenced by the teens in this study, might be viewed as normalized, perhaps even “information literate” when seen in the fuller information context of the information behavior of their teachers and school librarians. Furthermore, the data might offer a more nuanced understanding of the information world of the school community as a whole, providing the school librarian and school community with an actionable, evidence-based needs assessment and providing suggested directions for future curriculum and program development.

A fair question may arise: “But how do we assess this according to existing standards?” Including ELIS to enlighten our local data does not exclude current (or future) standards, but may ask us to shift our interpretation of them. I suggest that the need to meet remote standards that do not take into account the nature of our own local communities’ challenges and privileges becomes less important when we can offer empirical evidence of our students’
real-world ICTLs. Conducting a participatory action ELIS study, then, can be a “tool”, a vehicle in and of itself, to move us from an information literacy pedagogy that forces all members—students, teachers, and librarians alike—into false binaries of “right/wrong”, toward an inclusive, participatory knowledge community. ELIS can provide directions for creating a new pedagogy, based not so much on specific tools or resources, or even about “information literacy,” but about choices and the implications of those choices.

It is up to the LIS education community, then, the graduate schools of library and information science, to offer structured support, leadership, and training to practicing librarians and library students (perhaps as a part of a methods course) in order for the school librarian profession to make this epistemological shift and glean valid, actionable data.

D. Role of School Library and Librarian Profession

So what of the role of the school librarian and implications for our profession? It may be that the Emperor has no clothes, just as we have quietly—almost secretly—whispered amongst ourselves in post-session library conference halls and carpools to and from (yet another) “info fluency” workshop. In these informal, collegial conversations there seems to be a shared admission that conducting information literacy session after session—usually database-driven and attached to a specific assignment—“doesn’t work.” But there seems to be a professional expectation in which we, as school or even academic librarians, feel we must invest our limited resources. In cafeteria klatches in middle and high schools, cubicle conversations in university libraries, conference hotel bathrooms between sessions, we
librarians who day in and day out work with middle-, high-, and college students all echo a lament: “What are we doing, and how do we do it better? Is it us? Is it ‘them’ (the students)?”

I’m suggesting that we ask ourselves: “Why are we teaching information literacy as our profession describes it?” Imagine if we as practitioners drew upon what Limberg and Sundin (2006) describe as a wider repertoire to create information behavior-informed, collaborative instruction? Using action research in our own libraries that incorporates an analysis of community information behaviors could provide legitimacy grounded in practice, not dogma.

**E. Lessons Learned and Future Research Directions**

Lessons learned from conducting my study include not ever feeling that the research could conclude; ongoing questions emerged with each interview. Furthermore, I would have preferred more student access at the school site as well as having some access to the students in their own homes, perhaps through having them keep their own logs. I also believe a fuller picture may have emerged if teachers’ interviews and teacher information behaviors had been included. All of these may indicate avenues for further research.

Future research would provide more in-depth answers as well as new questions. An immediate next question might be: “Exactly how similar are school librarians’ ELIS to the students’?” I began to see hints that they are strikingly alike, but more study is needed before I can make that claim. Another question might be: “So what should we as school librarians or professors of school librarianship actually do about the disconnect between student everyday information-seeking behaviors and the expectations of standard curricula?” Given the investment in information literacy as an element of professional identity from local to national
to international levels, what risks do we take by simply stating: “We’re not wasting any more budgets or lab time teaching these one-hit-wonder database-driven workshops that just don’t sink in”? What would our school libraries emerge as? Would their relevance be enhanced in the information/social lives of teens? Would the value of the school library and librarian then rest in providing the environmental conditions in which information fluencies naturally flourish as an extension of home, work, and life?

Obviously, I conclude with yet-emerging inquiries to inspire myself and others in the LIS profession to explore.
REFERENCES


http://www.aasl.ala.org/aaslblog/?p=25


http://www.ala.org/ala/aasl/aaslproftools/positionstatements/aaslpositionstatement.cfm


Vanderbilt Univ. Press, xi-xxiii.

seeking. Library & Information Science Research, 23, 319-334.

Case, D. (2007). Looking for information: a survey of research on information seeking, needs,  


and Y.S. Lincoln (Eds.), Handbook of qualitative research, 2nd edition. Thousand Oaks,  
CA: Sage, 509-536.


Harris, Frances Jacobson (2005). *I found it on the internet: Coming of age online*. Chicago, IL: ALA.


Lenhart, A., Madden, M., & Pew Internet & American Life Project. (2005). Teen content creators and consumers: More than half of online teens have created content for the internet; and most teen downloaders think that getting free music files is easy to do. Washington, D.C: Pew Internet & American Life Project.


Valenca, J. K. (2007). "It'd be really dumb not to use it" Virtual libraries and high school students' information seeking and use--a focus group investigation. In M.K. Chelton and C. Cool (Eds.), Youth information-seeking behavior: Theories, models and approaches II. Lanham, MD: Scarecrow Press, 207-256.


APPENDIX A: CYBRARY STUDENT SURVEY INSTRUMENT

The Cybrary and you: Student Survey

Survey instrument:
Use of electronic resources for school outside of school
Use of electronic resources for school at school
Technology at school
About you

PART 1: OUTSIDE SCHOOL:

Do you have Internet access at home?

What do you access from home?
Teacher homepage
Library catalog
Homework help
Electronic resources
Other

Where do you get information for assignments from? (1 being all the time; 6 never)
Home
From a friend/relative’s place
From a public library
From a university library
From an Internet café
Other

Do you go to public libraries?
Yes
No

How often do you go to public libraries?
Once or twice a week
Once or twice a month
Only now and then
Never

What is your opinion of the resources in public libraries?

Please indicate your agreement with the following statements by selecting one of the buttons below:

The books and resources in public libraries are too old:
Strongly disagree
Disagree
Neither Agree nor disagree
Agree
Strongly agree

Public libraries are good sources of information for assignments
Strongly disagree
Disagree
Neither Agree nor disagree
Agree
Strongly agree

**Public libraries are boring places**
Strongly disagree
Disagree
Neither Agree nor disagree
Agree
Strongly agree

**I feel at home in public libraries**
Strongly disagree
Disagree
Neither Agree nor disagree
Agree
Strongly agree

**I feel anxious in public libraries**
Strongly disagree
Disagree
Neither Agree nor disagree
Agree
Strongly agree

**Public libraries make me feel relaxed**
Strongly disagree
Disagree
Neither Agree nor disagree
Agree
Strongly agree

**Public libraries are a good place to meet friends**
Strongly disagree
Disagree
Neither Agree nor disagree
Agree
Strongly agree

**Libraries are a good place to use computers**
Strongly disagree
Disagree
Neither Agree nor disagree
Agree
Strongly agree

**I only go to public libraries to use the computers**
Strongly disagree
Disagree
Neither Agree nor disagree
Agree
Strongly agree

**I never use the computers at public libraries**
Strongly disagree
Disagree
Neither Agree nor disagree
Agree
Strongly agree

**The librarian is helpful.**
Strongly disagree
Disagree
Neither Agree nor disagree
Agree
Strongly agree

**How many hours a week do you spend reading?**
**How many hours a week do you spend playing computer games?**
**How many hours a week do you spend using a computer to surf the Internet?**
**How many hours a week do you use a computer for things other than gaming or Internet surfing?**
**What things do you do on the computer other than gaming or Internet surfing?**

**Which of the following do you have at home? (Mark all that apply)**
Encyclopedia
Dictionary
Books
Television
Radio
Computer
Fax machine
CD or cassette player
CDROM
Newspapers
Magazines
SEGA or Nintendo (games)
Other computer games
VCR
DVD
Mobile phone
Internet access

**How often do you use an encyclopedia to get information for schoolwork?**
Most days
Sometimes
Not very often
Never

**How often do you use a dictionary to get information for school work?**
Most days
Sometimes
Not very often
Never
How often do you use other books to get information for schoolwork?
Most days
Sometimes
Not very often
Never

How often do you use television to get information for schoolwork?
Most days
Sometimes
Not very often
Never

How often do you use radio to get information for schoolwork?
Most days
Sometimes
Not very often
Never

How often do you use a computer to get information for schoolwork?
Most days
Sometimes
Not very often
Never

How often do you use a CD or cassette player to obtain information for schoolwork?
Most days
Sometimes
Not very often
Never

How often do you use CD-ROMs to obtain information for schoolwork?
Most days
Sometimes
Not very often
Never

How often do you use newspapers to obtain information for schoolwork?
Most days
Sometimes
Not very often
Never

How often do you use magazines to obtain information for schoolwork?
Most days
Sometimes
Not very often
Never

How often do you use videos as a source of information for schoolwork?
Most days
Sometimes
Not very often
Never

**How often do you use the internet as a source of information for schoolwork?**
Most days
Sometimes
Not very often
Never

**How many computers are in your home?**
None
One
Two
Three or more

**About how many books are in your home?**
Less than 10
Between 11-20
Between 51-100
More than 100

**Do you have books of your own?**
Yes
No

**How many books do you own?**
Less than 10
Between 11-50
More than 50

**If you chat on the internet, do you talk to people: (1-5, 1 being most, 5 least)**
Local friends
People from my city
People from my state
From my country
Overseas

**Do you buy books for yourself?**
Yes
No

**Where do you buy books?**
Supermarket
Bookshops
Newsagents
Flea markets
Second-hand bookshops

**Do you buy magazines?**
Yes
No

**How many magazines do you buy?**
One a month
Two a month
More than two a month

If you own a mobile phone, how often do you use it to send text messages?
More than once a day
Once a day
Once a week
Once a month
Never

Who do you message?
Family
Friends

Do you use a mobile phone to talk about school work?
Yes
No

AT SCHOOL:

How often do you go to the school library?
Daily
Weekly
Fortnightly
Monthly
Less than once a month

If you go to the library every day, why do you go? (1=strongly agree, 5= strongly disagree)
I like to be alone
I like reading
I like computers
I like the teacher librarian
I meet my friends there
It's air-conditioned
I don’t like sport

If you don’t go to the library, what are the reasons?
It’s too crowded
I have no need to
I don’t like the library staff
I don’t like reading
It’s not a place for boys

Please rate your agreement with the following statements:

I enjoy the school library
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

**There are enough resources**
Disagree
Neutral
Agree
Strongly agree

**There aren’t enough resources**
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

**Resources are relevant and useful.**
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

**Books are too old.**
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

**It’s trend to be seen in the library.**
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

**I don’t want to be seen in the library.**
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

**The library makes me feel anxious.**
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

**The library makes me feel relaxed.**
Strongly disagree
Disagree
The library makes me feel frustrated.
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

The library makes me feel tired.
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

The library makes me feel happy.
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

Does your class have weekly reading sessions in the library?
Yes
No

I am very confident I can find resources in the library.
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

Who taught you to find resources in the library?
(Note those that apply; 1 most important, 8 least important)
I taught myself
A parent
A carer
A teacher
My friends
Librarians at the public library
School librarians
Others

If you said “others” who were they?

I use computers in the library to: (select any that apply)
Search the library catalog to find information
To find resources for assignments
Write assignments
Get information from a CD-ROM
Search the World Wide Web for information
Create graphs, diagrams, or websites
Email friends
Make a slide show
Take part in an Internet Relay Chat (IRC)
Communicate with schools in other countries

**Do you know how to access the World Wide Web in the library?**
Yes
No

**When you use the WWW at school, are you free to look at anything you want to?**
Yes
No

**Is it legal to copy images or other material from the WWW for your own use?**
Yes
No

**Have you been taught about copyright at school?**
Yes
No

**When you use computers in the library it is usually:**
On my own
With one other student
In a small group
With the whole class

**A teacher or librarian works with me to define an information problem:**
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

**A teacher or librarian works with me to select resources:**
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

**A teacher or librarian works with me to evaluate resources:**
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

Library staff are generally helpful.
Library staff are generally knowledgable.

Library staff are generally efficient.

Would you like to be a school librarian?

School librarians have interesting work:

I would enjoy working in a school as a librarian:

I would enjoy working as a school librarian because I like reading.

I would enjoy working as a school librarian because I like computers.

Being a school librarian would be boring.
Disagree
Neutral
Agree
Strongly agree

Being a school librarian is women’s work.
Strongly disagree
Disagree
Neutral
Agree
Strongly agree

TECHNOLOGY AT SCHOOL

Do you visit your teacher’s homework page?
Yes
No
My teacher does not have one.

Rate how often you use the following databases at home. If you use another database, please note it below in the “other” column.

World Book
Never
Monthly
Weekly
Daily

EBSCO Middle School
Never
Monthly
Weekly
Daily

ProQuest:
Never
Monthly
Weekly
Daily

FirstSearch
Never
Monthly
Weekly
Daily

Culturegrams
Never
Monthly
Weekly
Daily
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<tr>
<th>Database</th>
<th>Never</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily</th>
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<tr>
<td>Opposing Viewpoints</td>
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<td>A.P. Photo Archives</td>
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<tr>
<td>Discover:</td>
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<tr>
<td>Other</td>
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<tr>
<td>Rate how often you use the following databases at school? If you use another database, please note it below the “other” column</td>
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<td>World Book</td>
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<td>EBSCO</td>
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<td>ProQuest</td>
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<td>FirstSearch</td>
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<tr>
<td>Culturegrams</td>
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</tr>
</tbody>
</table>
Opposing Viewpoints
Never
Monthly
Weekly
Daily

A.P. Photo Archives
Never
Monthly
Weekly
Daily

Discover:
Never
Monthly
Weekly
Daily

Other

When do you mostly use computers (on your own free time at school)?
Before school
Passing period
After school
Lunch
Study hall

When you use computers on your own at school, are you using them for class-related research?
Yes
No

What classes do you use them for?

How confident are you in successfully finding useful resources and materials (articles, books, etc.) in your library media center or technology lab?
(On a scale of 1-5, with 1 being “I rarely find what I’m looking for without help” to 5 being “I always find what I’m looking for without help.”)
Encyclopedias (not online)
Books (not online)
Magazine articles (not online)
Encyclopedias (online)
Magazine articles (online)
Websites using a search engine.

When you have a project, where do you begin your research process? What materials do you begin with?
Book (e.g., encyclopedia, etc.)
Online catalog (browsing Alexandria)
Books on the shelf (scanning the shelves)
Search engine (e.g., Google a topic)
What types of resources do your teachers require when you do a research project?
Reference books
Online materials (on the Internet or one of the school databases)
Books from the public or school library
Interlibrary loaned books from other libraries

What is the difference between a resource on the Internet you find using a search engine like Google or Yahoo and a database?

What is the definition of “plagiarism?”

If the technology you use in your school were a car, what would it be and why? (e.g., a Ferrari, Corvette, school bus, etc.?)

Where do you use technology in your school?
Rate your preference for using technology:
(Rate on a 1-5 scale, where 1 means you hate using the technology in that setting; and 5 means you love using it in that setting)
Classroom (e.g., language arts classroom, science classroom, etc.)
Technology lab
Library
Why?

How frequently do you use these search engines?
Google
Never
Rarely
Sometimes
Frequently
Daily

IMSA Search engine
Never
Rarely
Sometimes
Frequently
Daily

Yahoo
Never
Rarely
Sometimes
Frequently
Daily
AltaVista
Never
Rarely
Sometimes
Frequently
Daily

Ask Jeeves
Never
Rarely
Sometimes
Frequently
Daily

Lycos
Never
Rarely
Sometimes
Frequently
Daily

Profusion
Never
Rarely
Sometimes
Frequently
Daily

Metacrawler
Never
Rarely
Sometimes
Frequently
Daily

Other:

How often do you use computer technology in:
Art
Never
Rarely
Sometimes
Frequently
Daily

Social science (social studies, history, etc.)
Never
Rarely
Sometimes
Frequently
Daily
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<tr>
<th>Subject</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Frequently</th>
<th>Daily</th>
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<td>Language arts, communication arts</td>
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<td>Music</td>
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<td>P.E.</td>
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<td>Foreign language</td>
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<td>Science</td>
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<td>Math</td>
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<tr>
<td>Health</td>
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<tr>
<td>Consumer ed (life skills, family and consumer science, etc.)</td>
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</tbody>
</table>
Sometimes
Frequently
Daily

**Business**
Never
Rarely
Sometimes
Frequently
Daily

**Library**
Never
Rarely
Sometimes
Frequently
Daily

**Technology/computer**
Never
Rarely
Sometimes
Frequently
Daily

**Extracurricular clubs**
Never
Rarely
Sometimes
Frequently
Daily

**Other (electives)**

What type of technology (e.g., desktop computer, laptop/notebook, heart rate monitors, etc.)

_____________________________________________________

**ABOUT YOU:**

What is your gender?
Male
Female

How old are you in years?

What year level are you?
7
8
9
10
My family and I speak a language other than English at home
Yes
No

If you answered yes, what is the language you most often speak at home.
APPENDIX B: GUIDED INTERVIEW QUESTIONS

STUDENT: #
GRADE:
PERIOD INTERVIEWED:
LOCATION:

-------------------------------
"INFORMATION LITERACY": WHAT

➢ What does it mean to be information literate? Do you consider yourself "information literate?"

RESEARCH PROCESS: WHAT, HOW, WHERE, WHO

So, let's start with a few stories:

➢ Give me an example of a night's homework where you needed information to actually finish the assignment. Say, this week: can you think of an instance where you needed to look for something to get your assignment done? Where did you begin? What did you look for? How did you find it? Were you able to answer your question?
➢ Here is a real assignment required by the NCHS. How would you go about beginning this assignment?
➢ Now, here is another one: how would you go about approaching this one?
➢ What does "research" mean? What is " research" to you?

Tell me how you go about finding information for a homework assignment.

RESOURCES: WHAT, WHERE, HOW, WHO
So, how do you find resources? What *is* a resource for homework for you? What do you use? Why?

How do you know when you have found something "good"?
So, say you're doing some research for a paper. How do you decide when you have "enough" information?

(Most students did say that the difference between a resource on the internet you find using a search engine like Google and a database is that it is "less reliable": yet, most students begin their search with Google, and rarely use the databases.) Explain what "reliable" means to you.

Many students said that teachers or librarians don't necessarily work with them to select or evaluate resources. So, how do you do find what you're looking for? Who helps?

Does it matter what types of resources you use for your homework?

What types of resources do you actually use to complete your homework? (e.g., magazines? books? websites?)
Why use Google? What does it do for you? Where does it fail?

Do you use databases from the school? Why? Why not? How long does it take you to find what you're looking for?

What's the difference between using the Internet and using a database from the school library? What *is* a database, anyway? Where do they come from?

**NATURE OF THE QUESTIONS: WHAT, WHO**

What type of questions do you find yourself having in the course of your homework assignments? How do you find answers for those? Where do you go?
Okay, so let’s say you’re looking for information NOT related to homework: how do you find information for that?

Give me an example of a question that would make you use the school library. When you have a question that requires you to go the library, where does that question come from: the assignment requirement (e.g., a specific type of resource, etc.), a teacher telling you to go, or do you go from your own curiosity?

SCHOOL LIBRARY: WHY, WHAT

Did you have visits for library instruction in the school library? Tell me about it: did it help you find resources later on for assignments? How would you change it?

How would you describe the expertise of school library staff? What is it that they do?

Why go to the school library?
What do you think the school library should do for you?

TECHNOLOGIES: WHAT, WHEN, WHERE, WHO

What types of technology do you use for homework?
How would you describe your skills in technologies?
How would you describe the technology skills of the librarians? Your teachers?
Does technology have anything to do with the library?
What *is* technology?
APPENDIX C: LIBRARY RESEARCH WORKSHEET

RESEARCH WORKSHEET

Use this "form" to help you organize your project/research. If you do your "thinking" first you will save lots of time and frustration.

1. TASK DEFINITION: Write out in this area what you need to discover about your project. List questions you need to answer about your topic. Then, write your thesis or an explanation of WHAT you need to find or accomplish with your research.

2. TASK DEFINITION: In the boxes, list words which are associated with your topic or thesis. These can be terms, synonyms, names, dates, places, singular or plural. All need to be words which would be found on web pages or in indexes about your topic or in articles which would be written about your topic.

3. INFORMATION SEEKING STRATEGIES: Now, WHERE will you be most likely to find the information you want? Would it be in books, magazine or newspaper articles, on web sites, in encyclopedias? Check off the BOLD types of sources you need then identify how you will go about locating these types of materials. Plan your strategy for getting to those sources. Also plan on the PRIORITY of your need for these sources. Which ones do you need to get first, second, third, etc.

<table>
<thead>
<tr>
<th>BOOKS or REFERENCE SOURCES</th>
<th>PRIMARY SOURCES</th>
</tr>
</thead>
<tbody>
<tr>
<td>School library?</td>
<td>Library - hard copy?</td>
</tr>
<tr>
<td>Public library?</td>
<td>Online database?</td>
</tr>
<tr>
<td>Interlibrary Loan?</td>
<td>Online web site?</td>
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<tr>
<th>NEWSPAPERS</th>
<th>MAGAZINES</th>
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<td>Library - hard copy?</td>
<td>Library - hard copy?</td>
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<td>Online database?</td>
<td>Online database?</td>
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<tr>
<td>Online web site?</td>
<td>Online web site?</td>
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<thead>
<tr>
<th>PEOPLE/INTERVIEWS</th>
<th>WEB SITES</th>
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<tr>
<td>Personal contact?</td>
<td>Commercial?</td>
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<tr>
<td>Telephone directory?</td>
<td>Personal?</td>
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<tr>
<td>Friend of a friend?</td>
<td>Organization?</td>
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<td></td>
<td>Military?</td>
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<td>Government?</td>
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<td>Other?</td>
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<td></td>
<td>Educational?</td>
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</table>

4. LOCATE & ACCESS INFORMATION: Once you have located a resource, you need to figure out if the information you need is in the source. Check the table of contents, index, site map, etc. for your keywords. If you need to request materials through Inter Library Loan tell one of the LRC staff members what you need and from which library.

5. USE OF INFORMATION: At this point you need to begin reading your material, taking notes, and sifting what you have found for relevant facts and ideas. Thinking about how what you have fits together comes into play at this stage.

6. SYNTHESIS: From here on out you need to prepare your project/paper/report/presentation. You will create a new product that incorporates the information you discovered. You should not be repeating the facts, but applying them in a new way.